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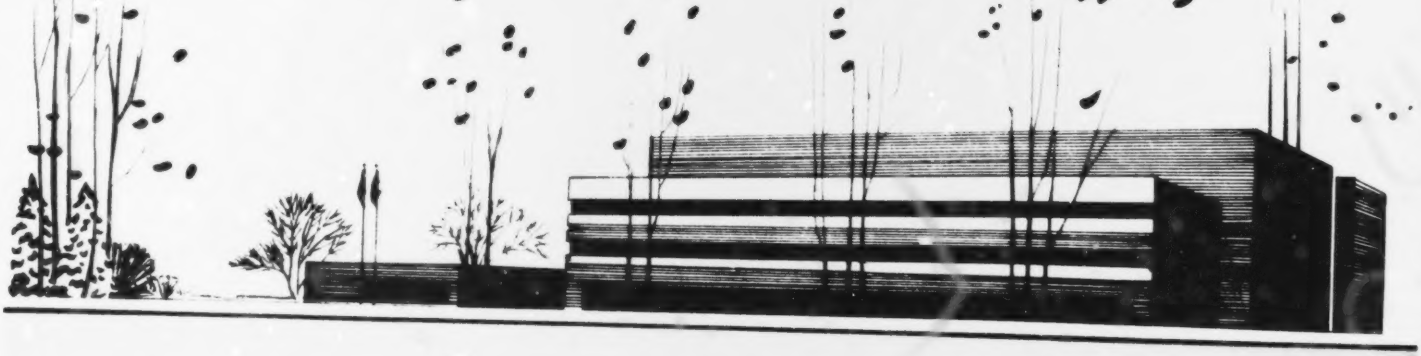
A review of important forest insect and disease problems in the SAULT STE. MARIE DISTRICT of Ontario, 1950 - 1980

Compiled by

H. J. Weir, M. J. Thomson,
D. C. Constable and C. G. Jones

Miscellaneous Report No. 9



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The Great Lakes Forest Research Centre is one of six regional establishments located across Canada and operated by the Canadian Forestry Service. The overall objective of the Service is to promote the preservation, enhancement and wise use of a healthy, attractive and bountiful forest resource and terrestrial environment for the economic and social benefit of all Canadians. The Centre pursues this objective by conducting two major programs: research and technical services and forestry development. Both programs address major problems affecting forest management and the forest environment primarily in Ontario, but because of the transprovincial nature of the forest resource, many elements of our research program are of national significance.

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A REVIEW OF IMPORTANT FOREST INSECT AND DISEASE PROBLEMS IN THE SAULT STE. MARIE DISTRICT OF ONTARIO, 1950-1980

Compiled by

H.J. Weir, M.J. Thomson, D.C. Constable and C.G. Jones[1]

GREAT LAKES FOREST RESEARCH CENTRE
CANADIAN FORESTRY SERVICE
DEPARTMENT OF THE ENVIRONMENT
1984

MISCELLANEOUS REPORT NO. 9

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[1] *Forest Research Technicians, Forest Insect and Disease Survey Unit*

©Minister of Supply and Services Canada 1984
Catalogue No. Fo29-8/9E
ISBN 0-662-13277-7
ISSN 0826-0222

Copies of this report may be obtained from:

Great Lakes Forest Research Centre
Canadian Forestry Service
Department of the Environment
P.O. Box 490
Sault Ste. Marie, Ontario
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FOREWORD

The first forest insect surveys in Ontario were carried out in 1936 from the Dominion Entomological Laboratory in Ottawa and continued from this location until 1944, when the province of Ontario was divided, for the purpose of these surveys, into northern and southern Ontario. In 1945, personnel from Ottawa continued to conduct and report on surveys in the area south of the Algonquin Park and Parry Sound forest districts, while personnel from the Forest Insect Laboratory in Sault Ste. Marie carried out surveys in the area to the north. In 1950 responsibility for reporting insects for all of Ontario fell to the Sault Ste. Marie laboratory. In 1952 the Forest Disease Survey was initiated with headquarters in Maple, Ontario, then was moved to Sault Ste. Marie in 1967. The results of these surveys of insects and diseases are reported in the Annual Report of the Forest Insect and Disease Survey (FIDS) published by Canadian Forestry Service headquarters in Ottawa. In addition, annual district and regional reports, begun in 1948, are prepared by FIDS technicians (Rangers) in Sault Ste. Marie. In 1980 a new provincial report was released in Ontario. The contents of the following review have been abstracted from these reports and compiled in alphabetical order by the scientific names of species in each of the following categories:

Major Insects or Diseases

Capable of causing serious injury to or death of living trees or shrubs.

Minor Insects or Diseases

Capable of causing sporadic or localized injury but not usually a serious threat to living trees or shrubs.

Abiotic Damage

Damage caused by non-living factors.

Diebacks and Declines

Damage usually characterized by the death or deterioration of tree crowns and caused by either biotic or abiotic factors, frequently unknown.

All measurements in this review are in metric form and conversions from Imperial measurements from the earliest reports are taken to the second decimal point, i.e., [sq. mi. to km^2 = area (sq. mi.) x 2.59 = area km^2]. Infestation maps in this review were copied from the original maps in the FIDS technicians' reports. Abbreviations for the common names of the host tree species, along with the scientific names, are shown in Appendices A and B. To facilitate the location of hosts, deciduous and coniferous species have been separated and listed alphabetically under the common names.

Appendix C is a series of maps for northeastern Ontario grouped alphabetically by insect species or disease pathogen and showing the location of infestations within a region or infestation boundaries that extend beyond regions.

ACKNOWLEDGMENTS

The authors wish to acknowledge Dr. G.M. Howse, Head, Forest Insect and Disease Survey Unit; Miss C.A. Plexman, Head, Scientific and Technical Information Services; and Mr. P. Jakibchuk, Technical Services Officer, for advice and support during the preparation of this review.

We also wish to acknowledge the following authors of the annual FIDS district and regional reports from which this review was abstracted:

1950-1951	A.G. MacDonald
1952	J.E. MacDonald, L. Jago
1953	J.E. MacDonald
1954-1955	H.R. Foster
1956-1957	W.J. Miller
1958-1960	A.A. Harnden
1961-1966	H.G. McPhee
1967-1968	H.J. Weir
1969-1980	K.C. Hall

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INTRODUCTION

This report is a review of significant forest insects and diseases that have occurred in the Sault Ste. Marie District from 1950 to 1980, with a brief summary of outbreaks prior to 1950. The present Sault Ste. Marie District was reduced in size from the original district by deleting Lake Superior Provincial Park in the north and the present Blind River District in the east. In the selection of pests for this report, particular attention was paid to the major working groups of host species in the district, namely, tolerant hardwoods (sugar maple, hemlock, yellow birch, red oak) and conifers (white pine, red pine, jack pine, white spruce, balsam fir). The insects and diseases included are capable of causing or have caused tree mortality or a reduction in growth. Also included are abiotic factors that cause tree damage, i.e., salt, frost, winter drying and snow.

SUMMARY

FOREST INSECTS

Birch Skeletonizer, *Bucculatrix canadensisella* Cham. [Major]
pages 11 - 14

This insect defoliates both white birch and yellow birch; widespread outbreaks usually last 3-4 years, then virtually disappear. Defoliation seldom causes mortality but weakened trees are hosts for secondary insects and diseases. Severe browning of white birch was first recorded between Sault Ste. Marie and Montreal River from 1942 to 1944. Infestations covered in this report occurred between 1961 and 1965 and from 1969 to 1971. The 1961-1965 infestation may have been a predisposing factor in the birch decline reported in 1963 and 1964 (see page 139).

Large Aspen Tortrix, *Choristoneura conflictana* (Wlk.) [Major]
pages 15 - 21

No tree mortality is recorded as having been caused by this defoliator, which affects primarily aspen and poplar. Infestations were reported between 1955 and 1957 and between 1969 and 1972. There were no infestations reported in the district prior to 1955.

Spruce Budworm, *Choristoneura fumiferana* (Clem.) [Major]
pages 22 - 41

This insect is considered the most destructive insect pest of several coniferous hosts in eastern Canada, the main hosts being white spruce and balsam fir. Although not major hosts, black spruce, eastern hemlock and tamarack are attacked and considerable tree mortality can occur. This report deals with the decline of the 1938-1950 infestation, and progresses through increased larval populations in 1967 to the current severe infestation in 1980. Tree mortality was first observed in a small area in 1974 and increased to cover the northern part of the district in 1980.

Jack Pine Budworm, *Choristoneura pinus pinus* Free. [Major]
page 42

This is a destructive pest of pines that can cause tree mortality after about two years of severe defoliation. High populations were recorded in 1966 and 1967. No infestation was reported prior to 1950.

Larch Casebearer, *Coleophora laricella* (Hbn.) [Major]
page 43

A serious pest of native larch, this insect can cause reduced tree growth and some tree mortality after 2 successive years of severe defoliation. Severe defoliation occurred in 1952, 1968, and 1969. Low populations have been recorded periodically in the district since 1951. No infestations were reported prior to 1950.

Oak Leaf Shredder, *Croesia semipurpurana* (Kft.) [Major]
pages 44 - 47

This insect caused varying degrees of defoliation in the southern part of the district between 1958 and 1980. Several years of severe defoliation will seriously weaken red oak trees and allow secondary insects and diseases to cause mortality. No infestations were reported prior to 1958.

Greenstriped Mapleworm, *Dryocampa rubicunda rubicunda* (Fabr.)
pages 48 - 50 [Major]

This insect defoliates both red and sugar maple but prefers red maple understory. Moderate defoliation was recorded in 1954 and periodic low infestations have been reported since 1951. The insect was first reported in the district in 1939.

Linden Looper, *Erannis tiliaria* (Harr.) [Major]
pages 51 - 53

Pockets of varying degrees of infestation were reported in the district from 1950 to 1954, again in 1962 and 1963 and then in 1975 and 1976. The insect was not reported prior to 1950.

European Spruce Sawfly, *Gilpinia hercyniae* (Htg.) [Minor]
pages 54 - 56

This insect was considered an extremely destructive pest of white spruce forests in the 1930s and early 1940s until an accidentally introduced polyhedral virus caused an almost complete collapse of the widespread infestation. Low populations persisted in the district from 1950 until 1967.

Hemlock Looper, *Lambdina fiscellaria fiscellaria* Gn. [Major]
page 57

This destructive pest of eastern hemlock, cedar and balsam fir can cause tree mortality after one year of severe defoliation (50% or more of the foliage). Low numbers of larvae were reported from 1950 to 1962. No infestations were recorded prior to 1950.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn. [Major]
pages 58 - 69

Trembling aspen, the preferred host, seldom is killed in an outbreak, but sugar maple and red oak are severely weakened and may suffer mortality if an infestation persists or as a result of secondary factors. Outbreaks of this insect occurred from 1950 to 1953, from 1964 to 1968 and from 1976 to 1978.

Balsam-fir Sawfly, *Neodiprion abietis* complex [Major]
pages 70 - 78

Severe defoliation can cause tree mortality in balsam fir and white spruce when an infestation persists over a period of years. Infestations were recorded from 1949 to 1953, in 1959 and 1960 and in 1962 and 1963. No tree mortality was recorded following these infestations.

Redheaded Pine Sawfly, *Neodiprion lecontei* (Fitch) [Major]
pages 79 - 84

This perennial pest of red pine plantation trees was first reported in 1936 when the Insect Survey was formed. Since then infestations in varying degrees of intensity have been reported periodically in the district. Annual population trends are difficult to record because of the efforts of government agencies and private plantation owners to control the insect by clipping and ground or aerial applications of insecticides and viruses.

Jack Pine Sawflies, *Neodiprion pratti banksianae* Roh., *N. nanulus nanulus* Schedl., *N. virginianus* complex [Major]
pages 85 - 86

Populations of these sawflies were reported at varying degrees of infestation from 1950 to 1972.

European Pine Sawfly, *Neodiprion sertifer* (Geoff.) [Major]
page 87

This introduced sawfly was first recorded in North America in 1925. It was first observed on ornamental mugho pine in the city of Sault Ste. Marie in 1968. Infestations since then have been observed in red pine and Scots pine plantations in the Garden River Indian Reserve and in private plantations in the northern section of Sault Ste. Marie.

Bruce Spanworm, *Operophtera bruceata* (Hlst.) [Major]
page 88

Serious damage to deciduous forests occurs when high populations develop. Severe infestations were recorded in 1965 and 1966, and in 1975 and 1976. The insect was not reported prior to 1965.

Yellowheaded Spruce Sawfly, *Pikonema alaskensis* (Roh.) [Major]
page 89

This insect is a serious pest of young trees in plantations, and of ornamentals. Although there have been no large areas of mortality in the district, severe defoliation and single-tree mortality have occurred since 1951.

White Pine Weevil, *Pissodes strobi* Peck [Major]
page 90

This insect, by attacking the leaders of small pine and spruce trees, causes a reduction in height growth and after a few years of heavy infestation causes 'cabbaging' of the tree. High populations have occurred periodically since 1950.

Larch Sawfly, *Pristiphora erichsonii* (Htg.) [Major]
pages 91 - 100

Loss of increment usually occurs after 4-5 years of severe defoliation, whereas tree mortality can occur after 6-9 years. Moderate-to-severe defoliation was first recorded between 1938 and 1941, then from 1955 to 1959, again between 1965 and 1969, and finally from 1976 to 1978.

Mountain-ash Sawfly, *Pristiphora geniculata* (Htg.) [Major]
pages 101 - 104

Although mountain-ash trees are not considered merchantable, a great number are utilized as shade and ornamental trees in urban areas. This insect can weaken trees when prolonged infestations occur and subsequent borer infestations can cause mortality. Populations of varying intensities have been recorded during most years since 1958.

Ambermarked Birch Leafminer, *Profenusa thomsonii* (Konow) [Major]
pages 105 - 109

Several years of severe leafmining by this miner can account for a loss of increment; however, as the insect feeds late in the growing season, damage is usually minimal. Moderate-to-severe defoliation occurred from 1950 to 1963.

Other Noteworthy Insects [Major and Minor]
page 110 - 124

Insects with the potential for causing damage to stands regeneration and plantations.

FOREST DISEASES

Armillaria Root Rot, *Armillaria mellea* (Vahl ex. Fr.) Kumm. [Major]
page 127

This root rot is capable of killing both weakened and healthy trees and is a particularly serious pest in pine and spruce plantations that have been planted around old stumps. Small pockets of mortality occurred in 1963-1964.

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau [Major]
pages 127 - 128

This destructive disease was first found in the district in 1967. The disease has spread over the southern part of the district as far north as the 47th parallel and has killed most mature elms.

Needle Rust, *Chrysomyxa ledi* d By. [Major]
page 128

This is the most widespread rust in the Canadian boreal forest. It is of little concern on mature trees, but the potential for damage in young trees or nurseries is high. It has been present periodically at low incidence since 1958.

Ink Spot of Aspen, *Ciborinia whetzelii* (Seaver) Seaver [Major]
page 129

As a rule, severe defoliation by this disease results only in the loss of increment. No tree mortality has been recorded to date. Fluctuating levels of damage have been reported periodically since 1959.

Sweetfern Blister Rust, *Cronartium comptoniae* Arth. [Major]
page 129

Although this fungus causes stem cankers on jack pine trees, mortality is usually restricted to trees less than 7 cm DBH. Stem cankers on larger trees can cause volume losses of up to 11%. Light-to-moderate infections were recorded between 1970 and 1972, in 1974, and from 1975 to 1977; no infections were recorded in 1973 or from 1978 to 1980.

White Pine Blister Rust, *Cronartium ribicola* J.C. Fisch. [Major]
page 130

This is a destructive pest that causes top killing and tree mortality in white pine of all ages, particularly small natural regeneration and plantation trees. Infections of varying intensities have been recorded since 1955, with top killing and tree mortality observed in 1958 and 1972.

Scleroderris Canker, *Gremmeniella abietina* (Lagerb.) Morelet [Major]
page 131

This disease is particularly damaging to young trees in plantations. Mortality of young red pine and jack pine caused by this disease was first recorded in 1965.

Hypoxylon Canker, *Hypoxylon mammatum* (Wahl.) Miller [Major]
page 132

Mortality caused by this organism is usually restricted to trees in the 7- to 13-cm class growing on poor sites, but can cause branch and top mortality to trees of larger diameter. Varying degrees of infection have been commonly reported since 1953.

Shoot Blight on Red Pine, *Sirococcus strobilinus* Preuss [Major]
page 132

This blight is capable of causing mortality in trees up to 7 m in height when the incidence is high. Light infection was first reported in 1973.

Leaf and Shoot Blight of Aspen, *Venturia macularis* (Fr.) Müll. & Arx.
page 133
[Major]

Reduced stocking of reproduction aspen occurs when the incidence of this disease is high. Varying degrees of shoot mortality have been recorded since this disease was first reported in 1955.

Other Noteworthy Diseases [Major and Minor]
pages 134 - 136

These are diseases with the potential for causing damage to stands, regeneration and plantations.

ABIOTIC DAMAGE

pages 139 - 140

Abiotic damage is caused by a variety of factors such as frost, winter drying, etc. Weakened trees are then susceptible to other diseases. Severe abiotic damage has been reported periodically since 1955.

DIEBACKS AND DECLINES

Birch Decline
page 143

This condition is caused by a variety of factors such as logging, climate, and severe infestations of defoliators and has been prevalent in varying degrees since 1963. Severe defoliation of birch foliage by *Bucculatrix canadensisella* in 1961 and 1962 could be the cause of the decline in 1963 and 1964, whereas the decline between 1967 and 1970 may have been caused by *Dimorphopteryx melanognathus*.

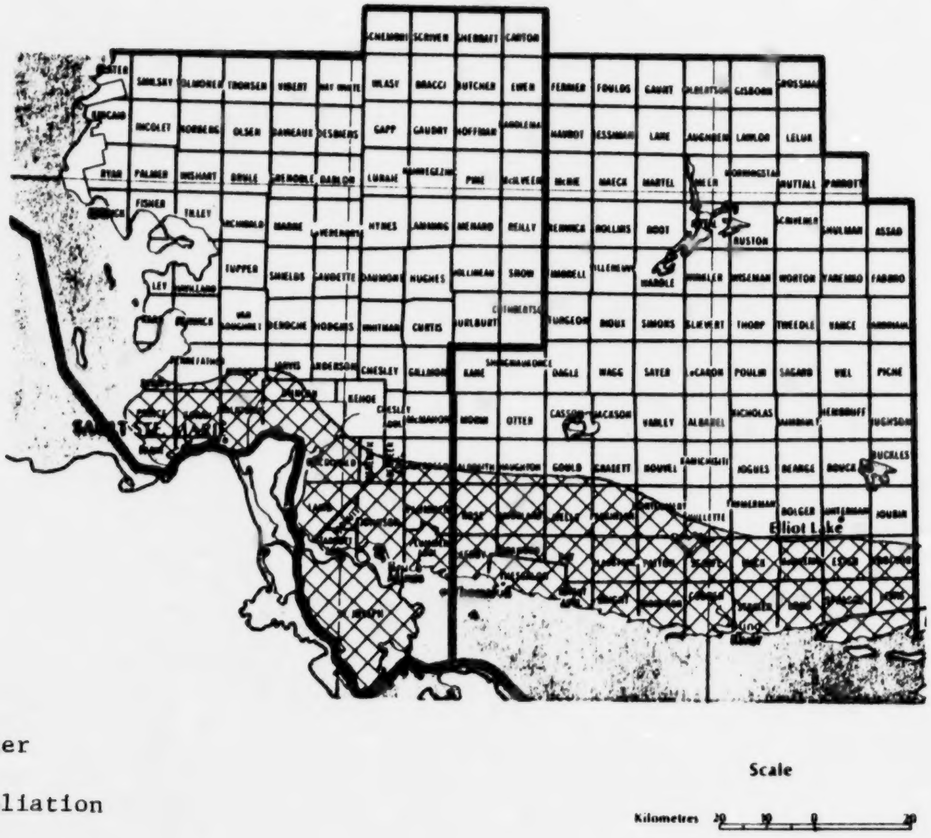
INSECTS

Birch Skeletonizer, *Bucculatrix canadensisella* Cham.

Host(s): birch [Major]

Year	Remarks
1950-1953	not reported
1954	severe defoliation near Montreal River
1955	decline to light defoliation near Montreal River
1956-1959	very low populations throughout the district
1960	light defoliation in Johnson Twp
1961	severe defoliation across the southern part of the district (see map, page 12)
1962	Severe defoliation persisted in the district.
1963	Severe defoliation of white birch occurred from Fenwick Twp along the Lake Superior shoreline, north to Slater Twp, and from Echo Bay to Bruce Mines in the south.
1964	Small pockets of heavy infestation persisted along the Lake Superior shoreline between Ley Twp in the south and Fisher Twp in the north.
1965	a decline in infestation, with a pocket of severe defoliation persisting in Ley and Kars twps
1966-1967	not reported
1968	light infestation in Slater Twp
1969	Severe defoliation occurred along Lake Superior from Fenwick Twp in the south to Slater Twp in the north.
1970	A severe infestation persisted along the Lake Superior shoreline, with new areas of severe defoliation occurring in Laird and Tarbutt Additional twps and on St. Joseph Island (see map, page 13).
1971	White birch trees were heavily infested in the Goulais Bay area in the north and in the vicinity of St. Joseph Island in the south (see map, page 14).
1972-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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GISBORN
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INCOLET
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GAUDRY
HOFFMAN
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LUBAIE
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McILVEEN
McKIE
MAECK
MARTEL
MORNINGSTAR
NUTTALL
PARROTT
FISHER
TILLEY
HYNES
MENARD
REILLY
HOLLINS
ROOT
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SHULMAN
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GAUDETTE
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WAGG
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Elliot Lake
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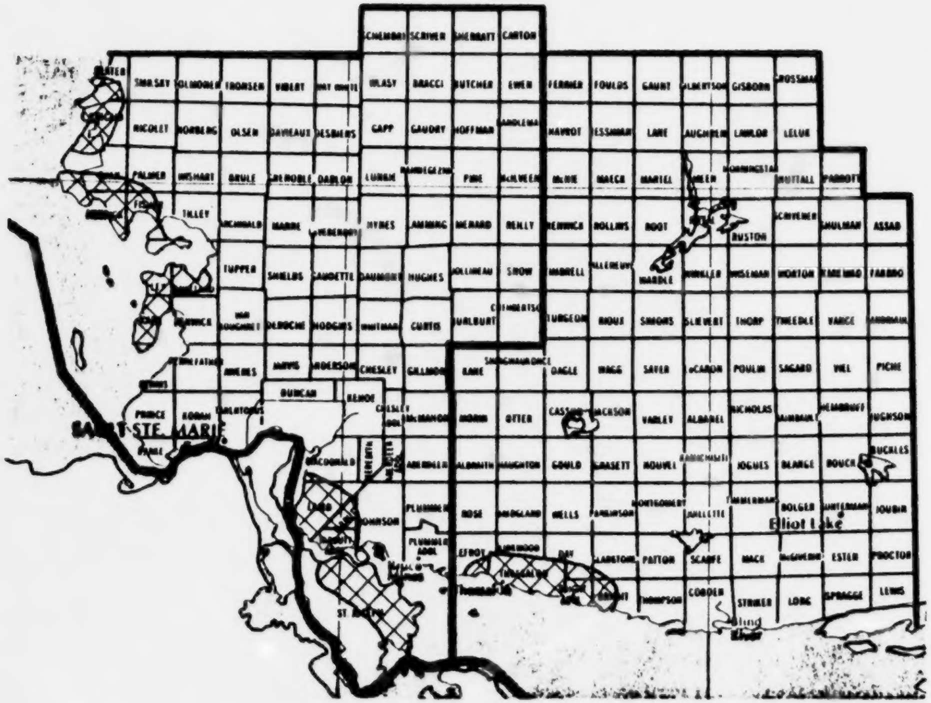
Birch Skeletonizer

Areas within which defoliation occurred in 1961

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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ROSE
MELLS
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SCARFE
MACK
ESTER
PROCTOR
THOMPSON
COBDEN
STRIKER
LONG
SPRAGGE
LEWIS
BOLGER
JOUBIN

Birch Skeletonizer

Areas within which defoliation occurred in 1970

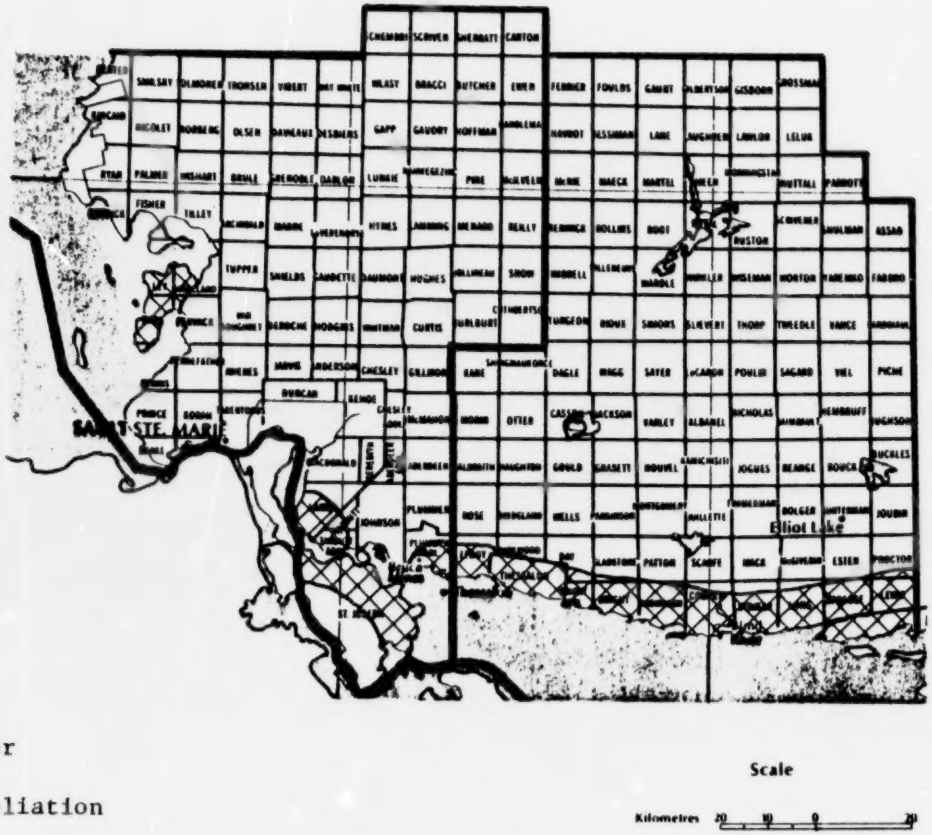
LEGEND

Moderate-to-severe defoliation ▩

Scale

Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Scale
Kilometres 20 10 0 20

Birch Skeletonizer

Areas within which defoliation occurred in 1971

LEGEND

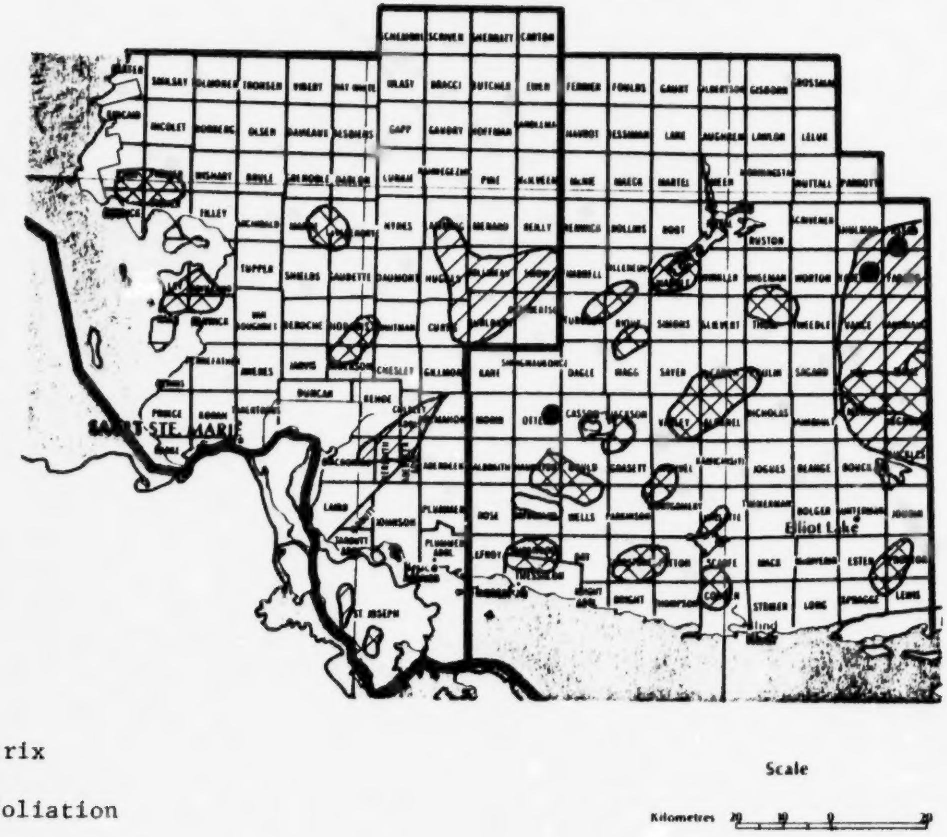
Moderate-to-severe defoliation ▨

Large Aspen Tortrix, *Choristoneura conflictana* (Wlk.)

Host(s): Po [Major]

Year	Remarks
1950-1954	not reported
1955	A heavy infestation occurred in about 120 ha in Herrick Twp.
1956	continued heavy infestation in 120 ha in Herrick Twp; smaller pockets in Fenwick, Shield and Gaudette twps
1957	A heavy infestation persisted in the central part of the district (see map, page 16).
1958	a decline in infestation; scattered pockets of severe defoliation (see map, page 17)
1959-1962	not reported
1963	low populations in Hodgins Twp
1964-1968	not reported
1969	A small pocket of heavy infestation occurred in Plummer Additional Twp. Light defoliation was observed in VanKoughnet Twp.
1970	Pockets of severe defoliation occurred between Echo Bay and Bruce Mines (see map, page 18).
1971	Infestations were less severe in the Echo Bay-Bruce Mines area (see map, page 19).
1972	Populations increased in the Bruce Mines area and in eight townships in the northern part of the district bordering Lake Superior (see map, page 20).
1973	a complete collapse of infestations in the district (see map, page 21)
1974-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
St Joseph
Scale
Kilometres 20 10 0 20

Large Aspen Tortrix

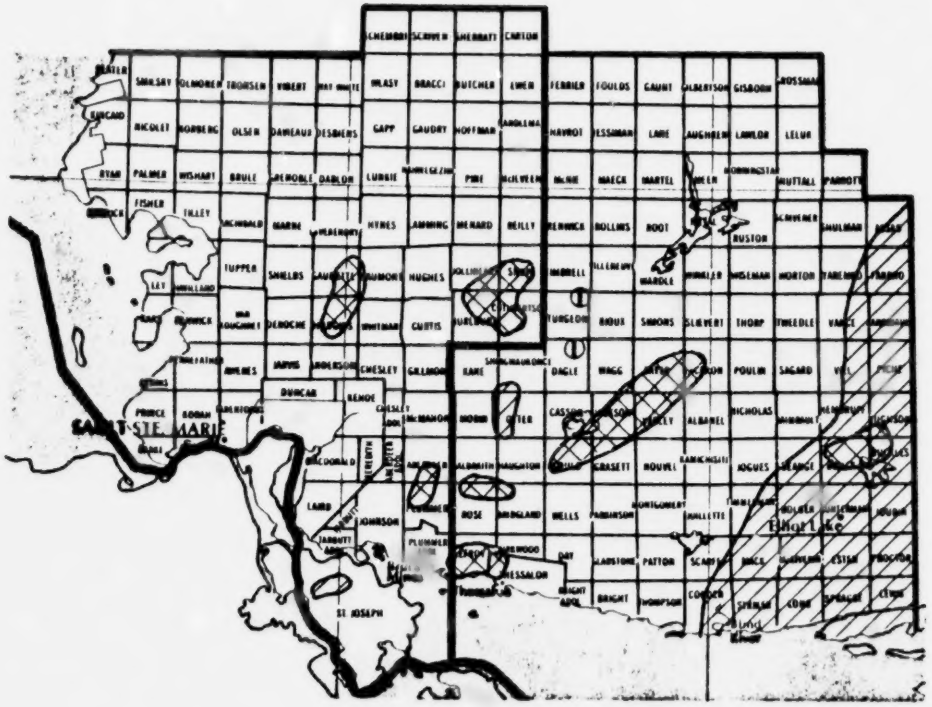
Areas within which defoliation occurred in 1957

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ● or ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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OLSEN
DAWEAUX
DESBIENS
GAPP
GAUDRY
HOFFMAN
BRACCI
BUTCHER
EWEN
FERRIER
FOULDS
GAUNT
ALBERTSON
GISBORN
ROSSMAN
HAVROT
JESSMAN
LANE
LAUGHREN
LAWLOR
LELUR
RYAN
PALMER
WISHART
BRULE
PENOBLE
DABLON
LUNKIE
PINE
McILVEEN
McNIE
MAECK
MARTEL
MORNINGSTAR
NUTTALL
PARROTT
FISHER
TILLEY
ARCHIBALD
MARNE
HYNES
LAMMING
MENARD
REILLY
RENNICK
ROLLINS
ROOT
RUSTON
SCRIVENER
SHULMAN
TUPPER
SHIELDS
AUMOND
HUGHES
IMBRELL
WARDLE
WISEMAN
MORTON
FABIANO
DEROCHE
WHITMAN
CURTIS
TURGEON
RIOUX
SIMONS
SLIEVERT
THORP
TWEEDLE
VANCE
JARVIS
ANDERSON
CHESLEY
KANE
DAGLE
WAGG
POULIN
SAGARD
DUNCAN
RENOE
PRINCE
KORAH
MORIN
OTTER
CASSON
ALBANEL
NICHOLAS
MacDONALD
MEREDITH
ALBRAITH
HAUGHTON
GRASETT
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LAIRD
JOHNSON
JARDUTT
ROSE
WELLS
PARKINSON
MONTGOMERY
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Elliot Lake
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PLUMMER
DAY
GLADSTONE
PATTON
ESTEN
PROCTOR
THESSALON
BRIGHT ADD.
BRIGHT
THOMPSON
COFFIN
SPRAGGE
LEHMAN
Blind River
ST. JOSEPH

Scale

Kilometres 20 10 0 20

Large Aspen Tortrix

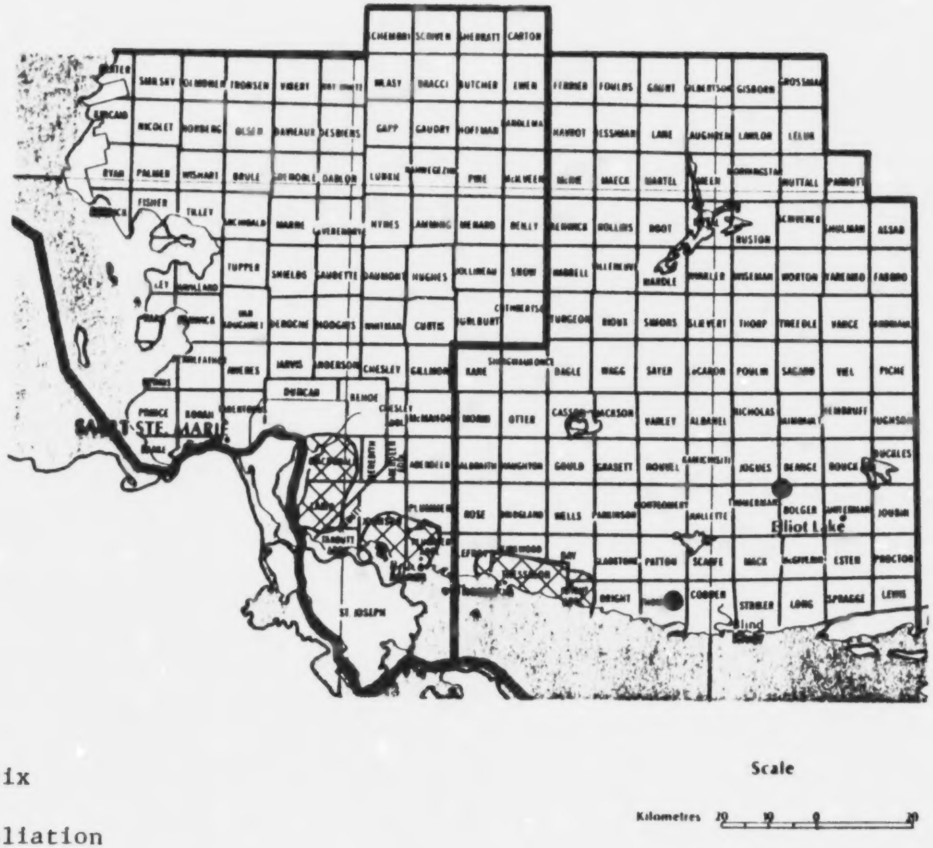
Areas within which defoliation occurred in 1958

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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GISBORN
GROSSMAN
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HOFFMAN
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LAUGHREN
LAWLOR
RYAN
PALMER
WISHART
BRULE
GRENOBLE
DABLON
LUBRIE
PINE
MAECK
MARTEL
NUTTALL
PARROTT
FISHER
TILLEY
ARCHIBALD
HYMES
MENARD
REILLY
HOLLINS
ROOT
RUSTON
SHULMAN
ASSAD
TUPPER
SHIELDS
GAUDETTE
DAUMONT
HUGHES
SNOW
HARDLE
WISEMAN
WORTON
YAREMKO
FABBRO
DEROCHE
HODGINS
WHITMAN
CURTIS
HURLBURT
CUTHBERTSON
TURGEON
RIOUX
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KANE
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DAGLE
WAGG
SAYER
POULIN
SAGARD
VIEL
PICHE
DUNCAN
McMAHON
OTTER
JACKSON
VARLEY
ALBANEL
NICHOLAS
HEMBRUFF
ABERDEEN
GOULD
GRASETT
ROWELL
JOGUES
BEANGE
BOUCK
BUCKLES
ROSE
WELLS
PARKINSON
MONTGOMERY
MALLETTE
TIMMERMAN
BOLGER
JOUBIN
BAY
GLADSTONE
PATTON
SCARFE
MACK
ESTEN
PROCTOR
BRIGHT
COBDEN
STRIKER
LONG
SPRAGGE
LEWIS
PRINCE
KORAH
SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind
Scale
Kilometres 20 10 0 20

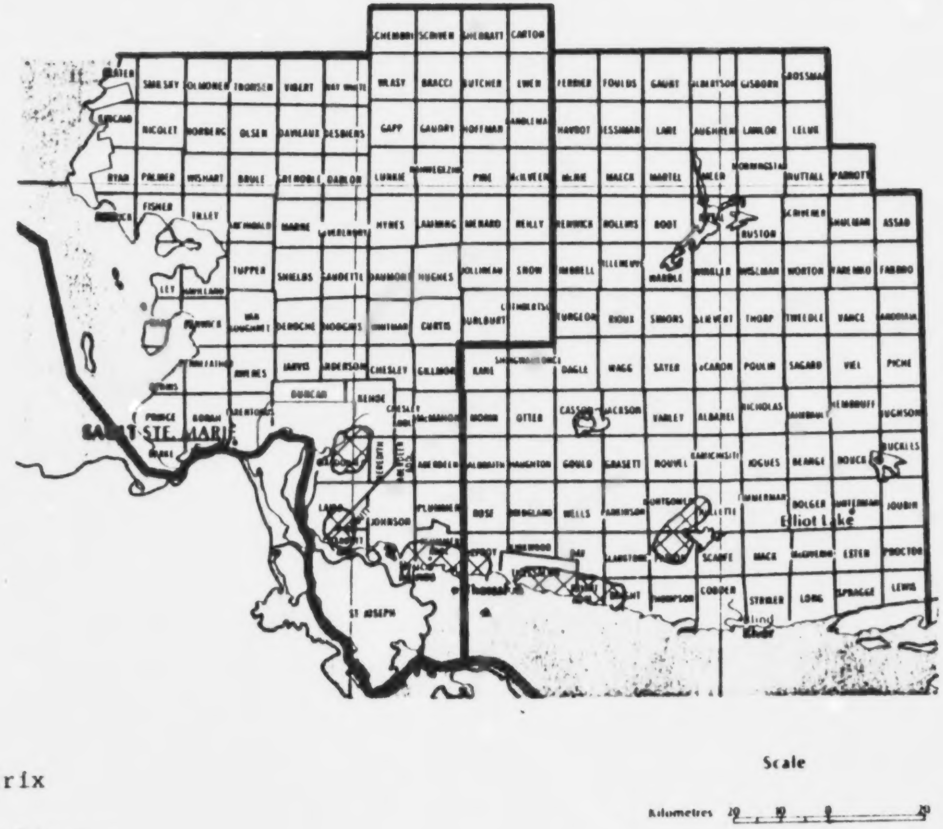
Large Aspen Tortrix

Areas within which defoliation occurred in 1970

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Scale
Kilometres 20 10 0 20

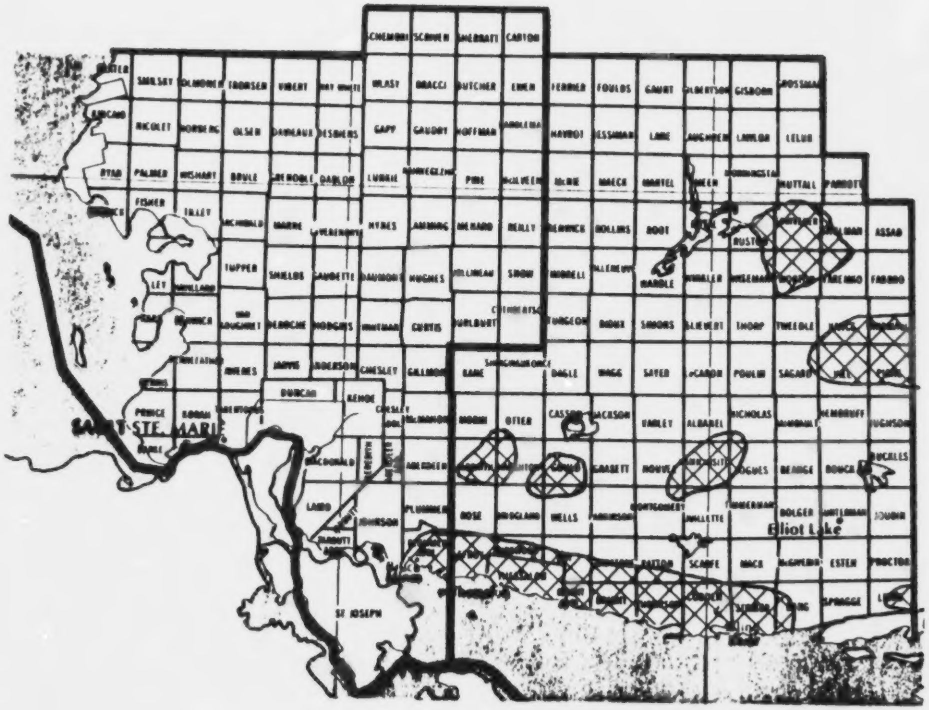
Large Aspen Tortrix

Areas within which defoliation
occurred in 1971

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
Scale
Kilometres 20 10 0 20

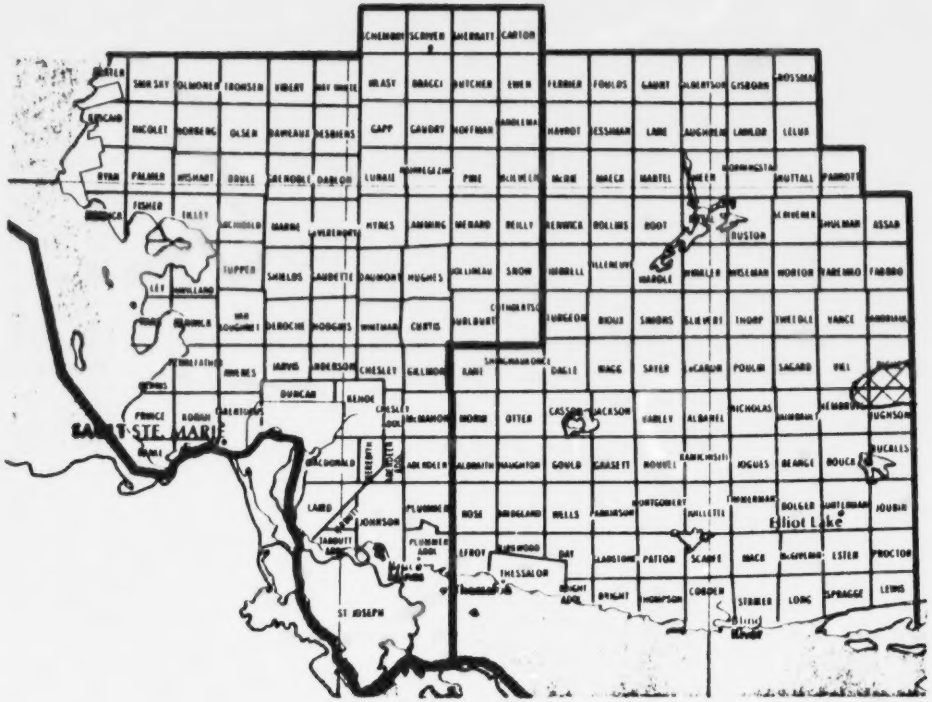
Large Aspen Tortrix

Areas within which defoliation occurred in 1972

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
THESSALON
Elliot Lake
Blind River
DUNCAN
KEHOE
OTTER
GOULD
WELLS

Large Aspen Tortrix

Areas within which defoliation
occurred in 1973

LEGEND

Moderate-to-severe defoliation ▨

Scale

Kilometres 20 10 0 30

Spruce Budworm, *Choristoneura fumiferana* (Clem.)

Host(s): bF, spruce [Major]

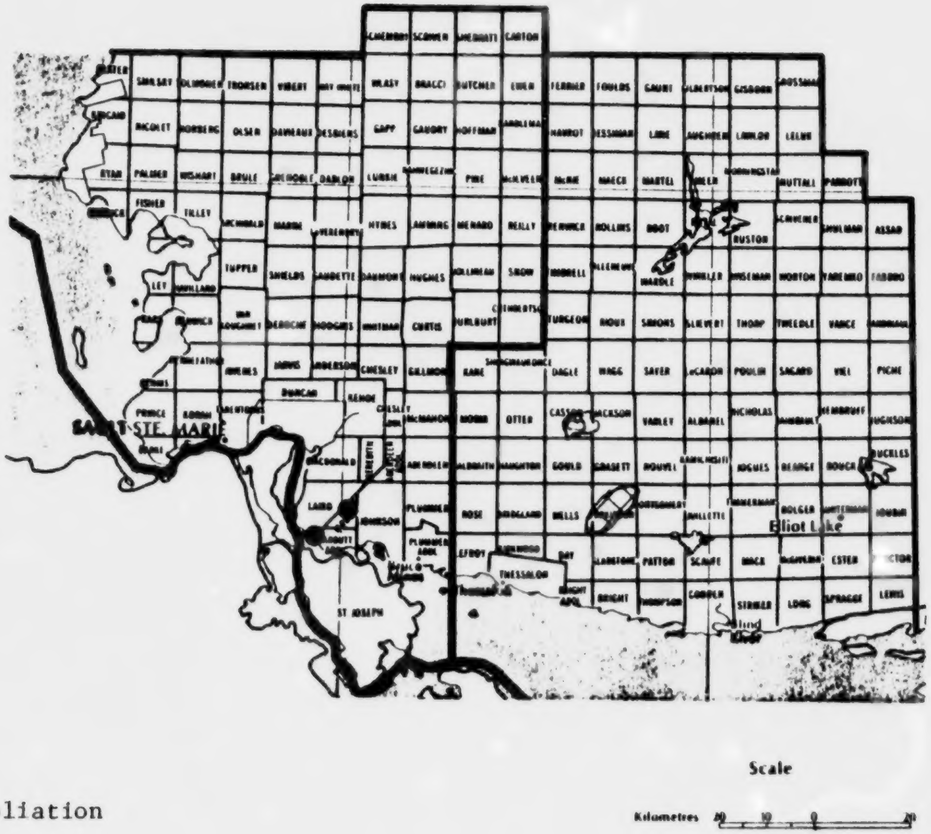
Year	Remarks
1950	low populations on white spruce in five townships in the southern part of the district
1951-1953	not reported
1954	low populations on St. Joseph Island
1955-1959	not reported
1960	few larvae found on beating mat samples in the Garden River Indian Reserve
1961-1966	common on beating mat samples in the district
1967	population increases on mat samples in MacDonald and Aberdeen Additional twps
1968	Further increases in populations occurred in MacDonald, Hodgins and Aberdeen Additional twps.
1969	Populations increased in Aberdeen Additional, Aweres and Jollineau twps.
1970	small pockets of severe defoliation observed in Tarbutt Additional and Laird twps (see map, page 24)
1971	A marked increase in populations and area of defoliation occurred in the northern townships in the district, and severe defoliation persisted in Laird and Tarbutt Additional twps (see map, page 25).
1972	Major increases in infestation occurred in the northern part of the district and in the city of Sault Ste. Marie. High populations persisted in Laird Twp (see map, page 26).
1973	Further increases occurred in the northern part of the district (see map, page 27).
1974	Modest increases were observed south of the 1973 infestation, with pockets of severe defoliation occurring at scattered locations in the central and southern parts of the district (see map, page 28). Balsam fir top and full-tree mortality was observed in the Ranger Lake area (see map, page 29).

(cont'd)

Spruce Budworm, *Choristoneura fumiferana* (Clem.) (concl.)

Year	Remarks
1975	Moderate-to-severe defoliation occurred in most spruce-fir stands in the district (see map, page 30). Tree mortality increased in the northern and eastern parts of the district (see map, page 31).
1976	Continued moderate-to-severe defoliation occurred throughout the district (see map, page 32). There was increased tree mortality in the northern part of the district (see map, page 33).
1977	There was a decline in infestation in the northern part of the district as a result of high tree mortality and the lack of foliage for insect feeding (see map, page 34). Tree mortality continued to be high (see map, page 35).
1978	Infestation declines occurred in most of the district, with the exception of the Goulais and Batchawana Bay areas and in the extreme south (see map, page 36). High tree mortality persisted in much the same area as in 1977 (see map, page 37).
1979	Populations increased in the eastern and southern parts of the district (see map, page 38). There was little change in tree mortality (see map, page 39).
1980	A further increase in populations occurred through much of the district (see map, page 40). There was continued high tree mortality, with new pockets of mortality occurring along the Lake Superior shoreline (see map, page 41).

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
THESSALON
DUNCAN
Scale
Kilometres 20 10 0 20

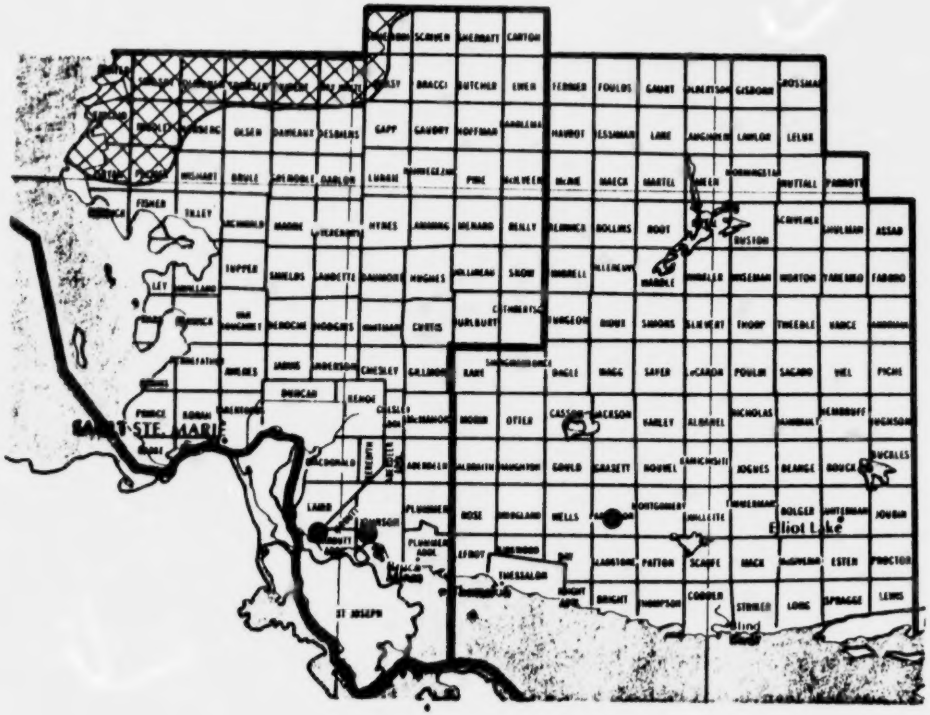
Spruce Budworm

Areas within which defoliation
occurred in 1970

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
Scale
Kilometres 20 10 0 20

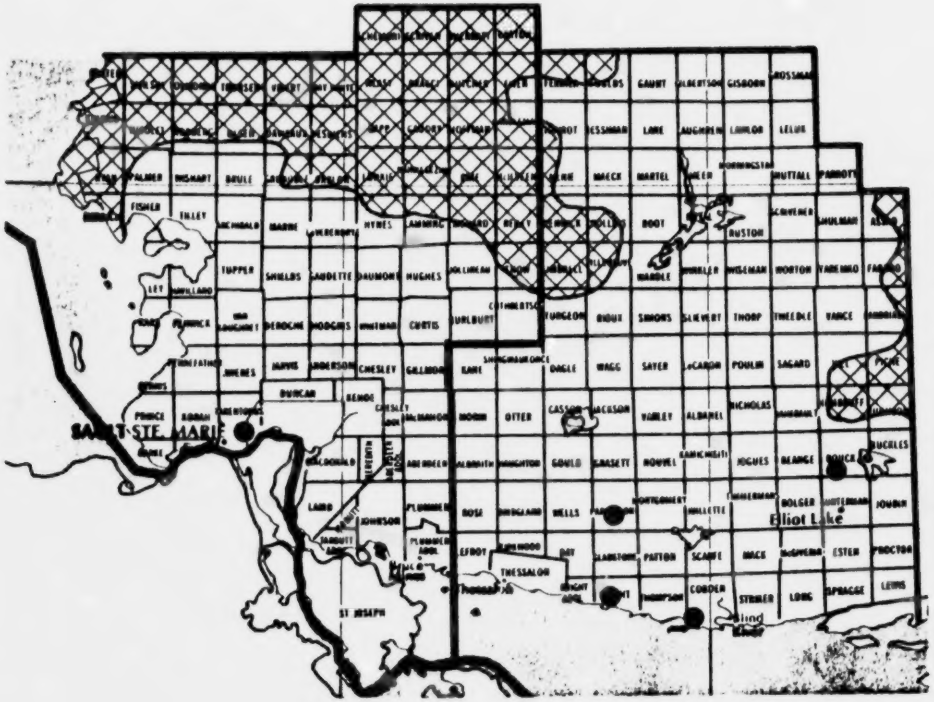
Spruce Budworm

Areas within which defoliation
occurred in 1971

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
THESSALON
ST JOSEPH

Spruce Budworm

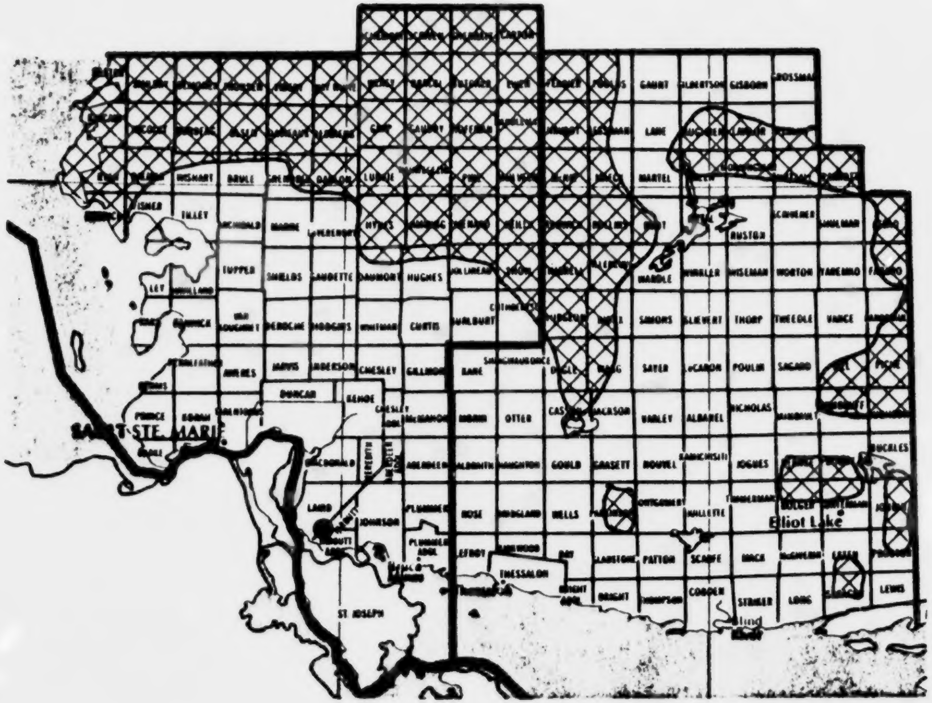
Areas within which defoliation
occurred in 1972

LEGEND

Moderate-to-severe defoliation ● or ▨

Scale
Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
THESSALON
DUNCAN
KEHOE
HUGHES
CURTIS
OTTER
GOULD
WELLS
PATTON
SCARFE
LEWIS
LONG
BUCKLES
JOGUES
SAGARD
POULIN
THORP
VANCE
HURLBURT
GILLMOR
CHESLEY
JARVIS
ANDERSON
SHIELDS
TUPPER
TILLEY
WISHART
DOYLE
LAIRD
JOHNSON
PLUMMER
ROSE
LEFROY
COBDEN
STRIKER
MACK
MARTEL
LANE
GAUNT
GISBORN
GROSSMAN
RUSTON
SCRIVENER
WORTON
WISEMAN
WHALLER
MARBLE
SIMONS
SAYER
LeCARON
ALBANEL
NICHOLAS
VARLEY
HOUGHTON
BOUVEL

Scale

Kilometres 20 10 0 20

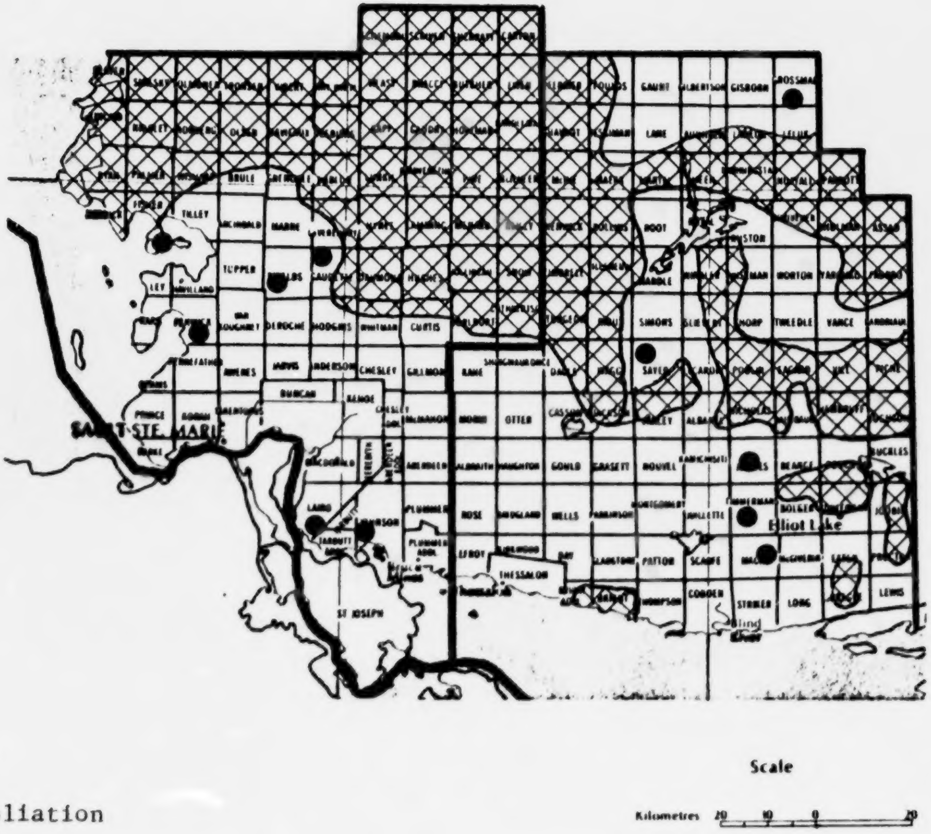
Spruce Budworm

Areas within which defoliation occurred in 1973

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
THESSALON
Scale
Kilometres 20 10 0 20

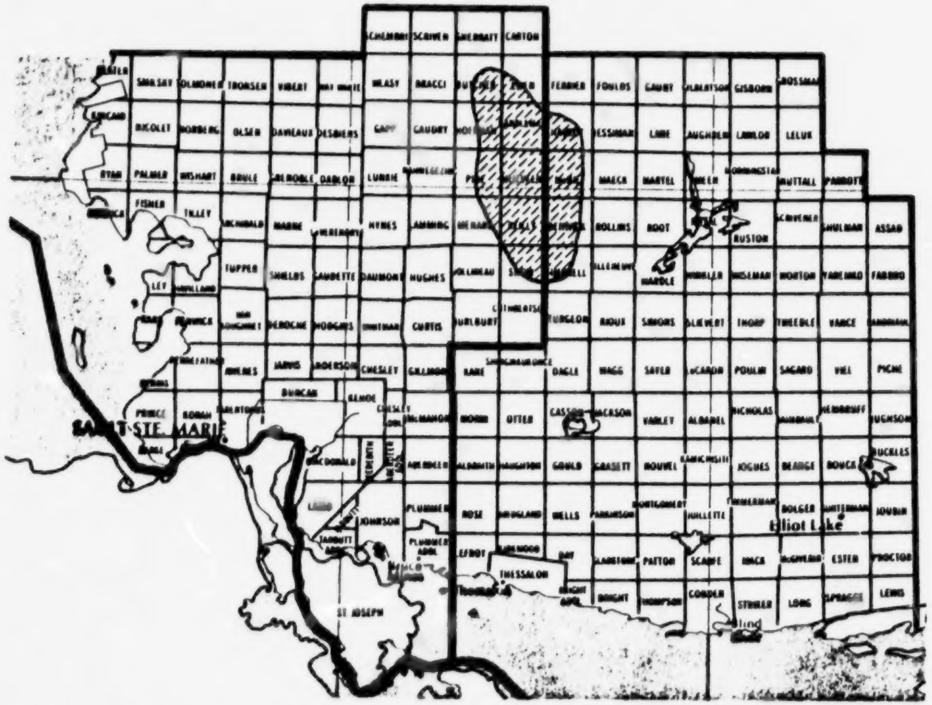
Spruce Budworm

Areas within which defoliation occurred in 1974

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
THESSALON
ST JOSEPH
DUNCAN
JOHNSON
PLUMMER
WELLS
GOULD
SAGARD
BUCKLES
PROCTOR

Scale

Kilometres 20 10 0 20

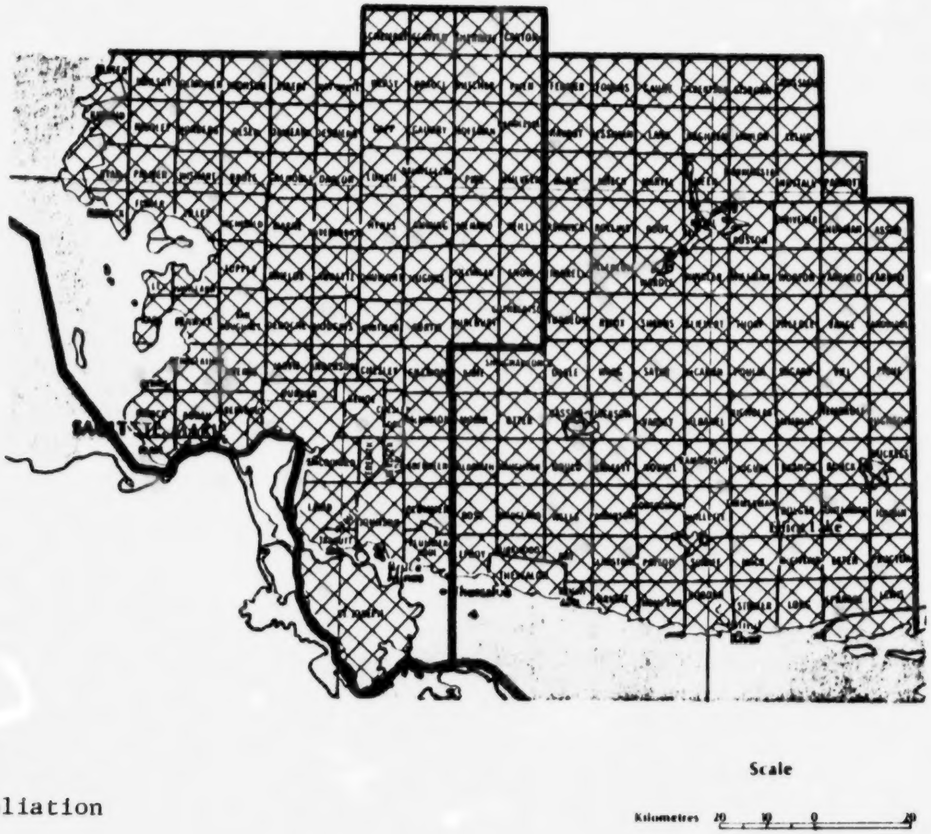
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1974

LEGEND

Mortality ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Scale
Kilometres 20 10 0 20

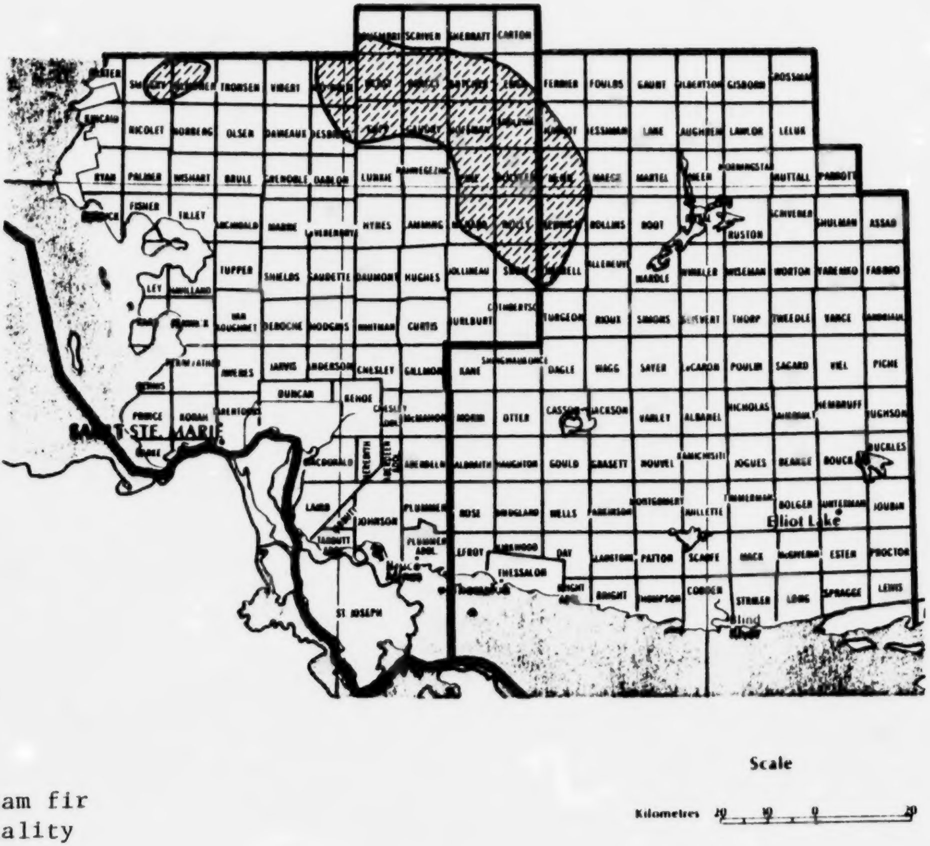
Spruce Budworm

Areas within which defoliation
occurred in 1975

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind River
THESSALON
Scale
Kilometres 20 10 0 20

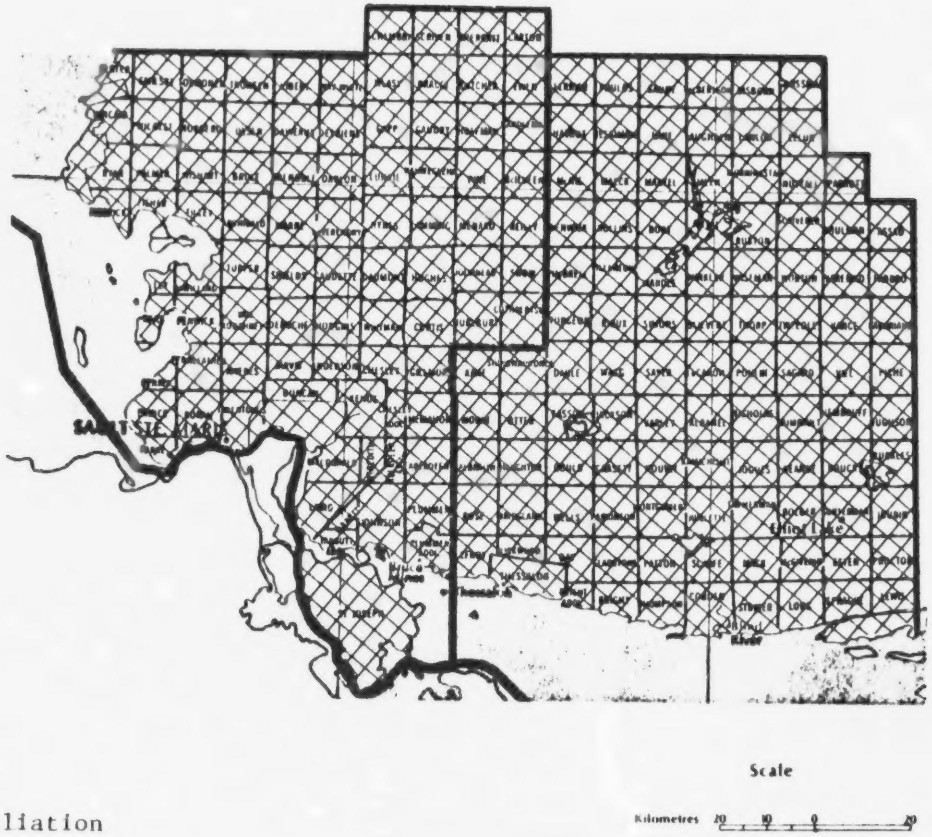
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1975

LEGEND

Mortality ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Scale
Kilometres 20 10 0 20

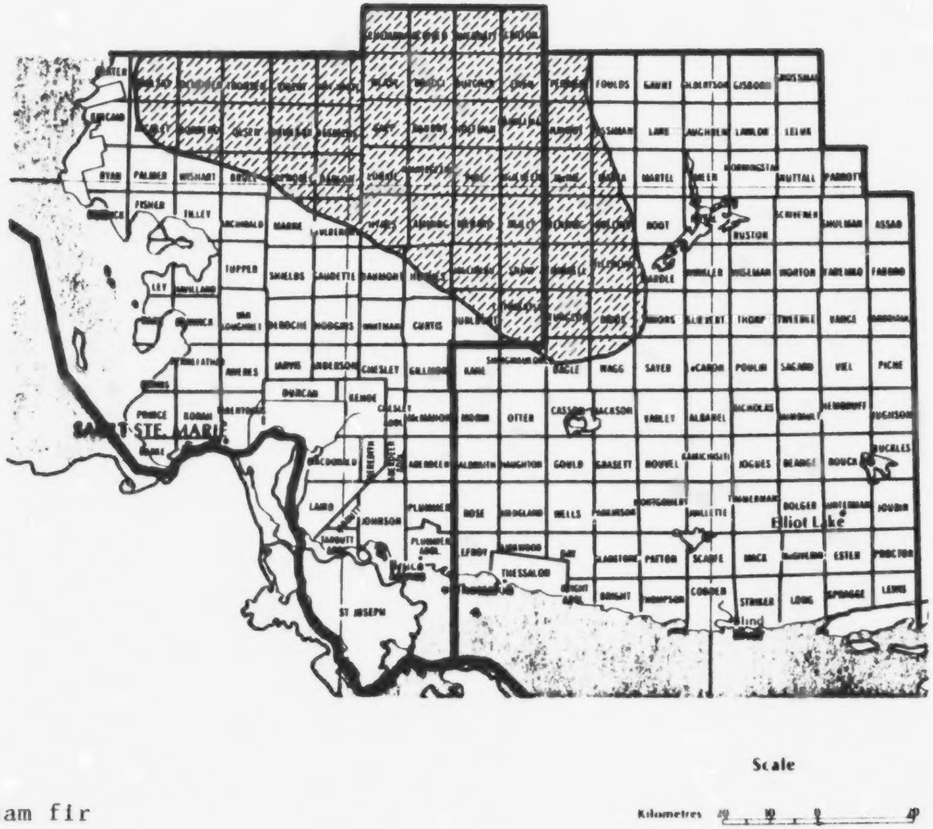
Spruce Budworm

Areas within which defoliation
occurred in 1976

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
THESSALON
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 40

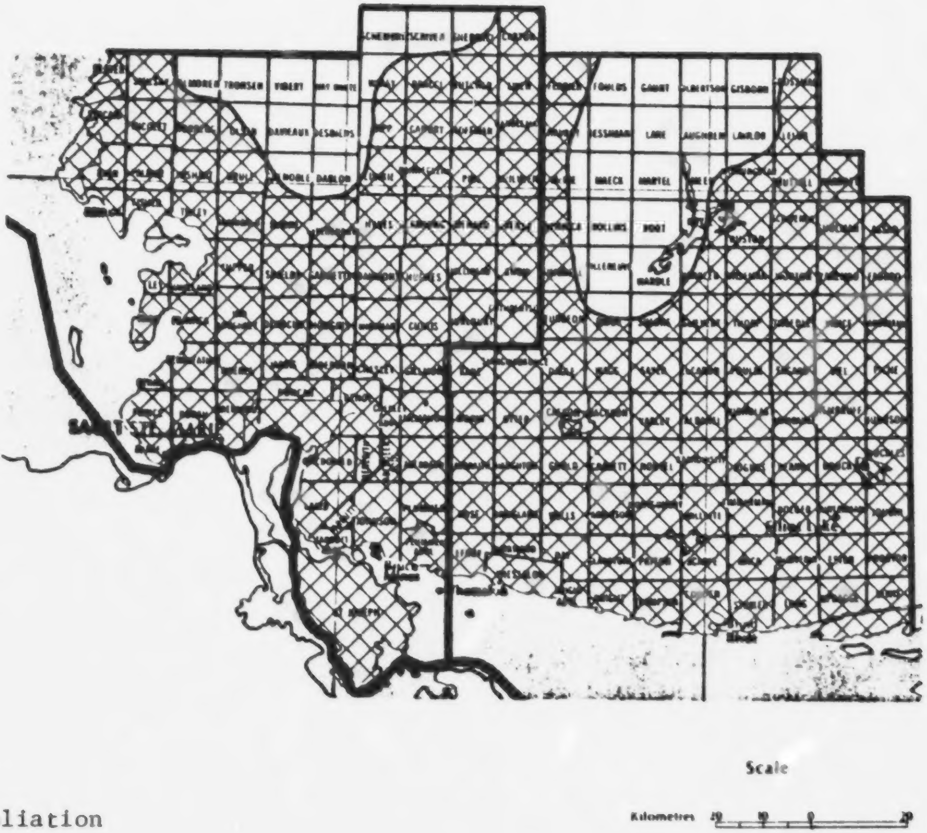
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1976

LEGEND

Mortality	▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
FOULDS
GAUNT
GISBORN
LANE
MAECK
MARTEL
ROLLINS
ROOT
Scale
Kilometres 20 10 0 20

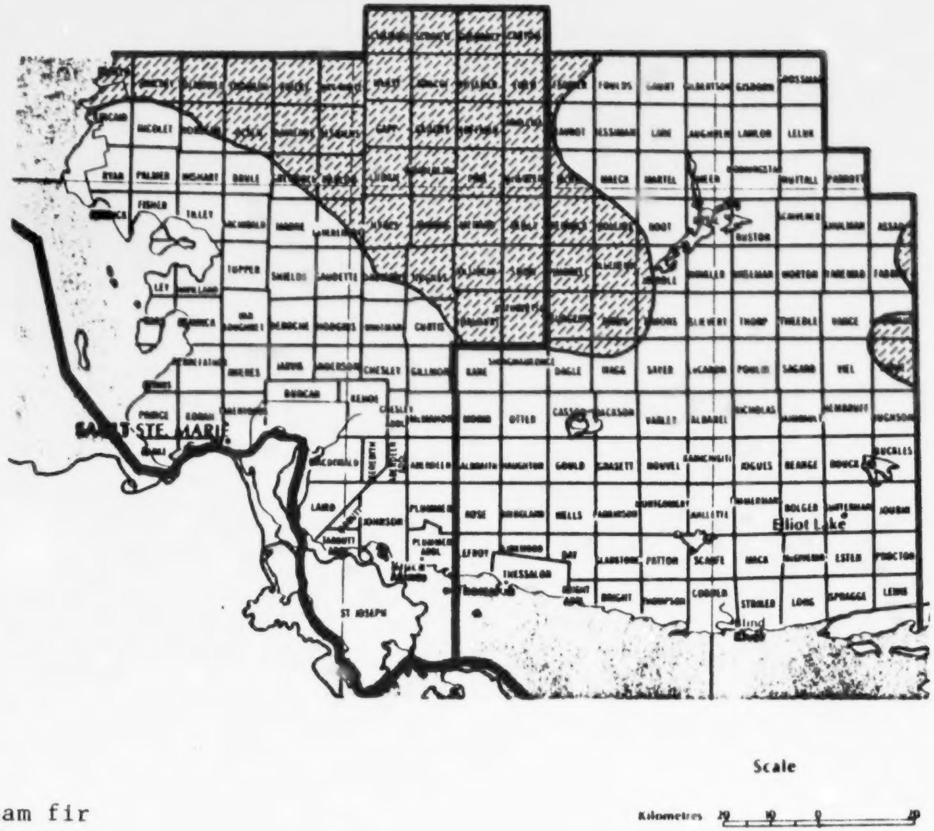
Spruce Budworm

Areas within which defoliation
occurred in 1977

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind
ST JOSEPH
THESSALON
DUNCAN
Scale
Kilometres 20 10 0 20

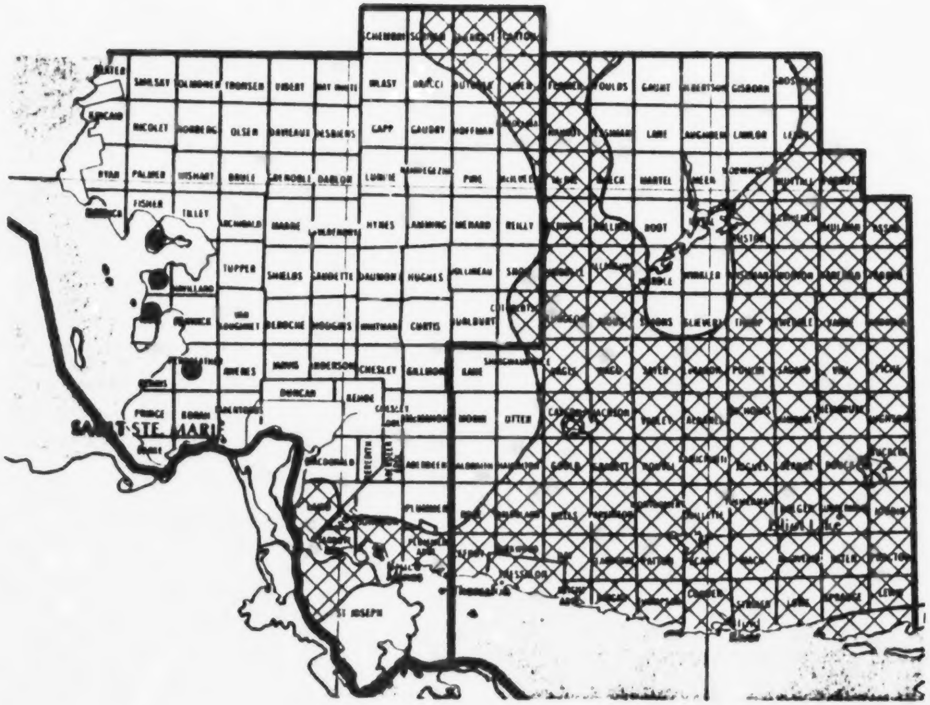
Spruce Budworm

Areas within which balsam fir
whole tree and top mortality
occurred in 1977

LEGEND

Mortality ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Scale
Kilometres 20 10 0 20

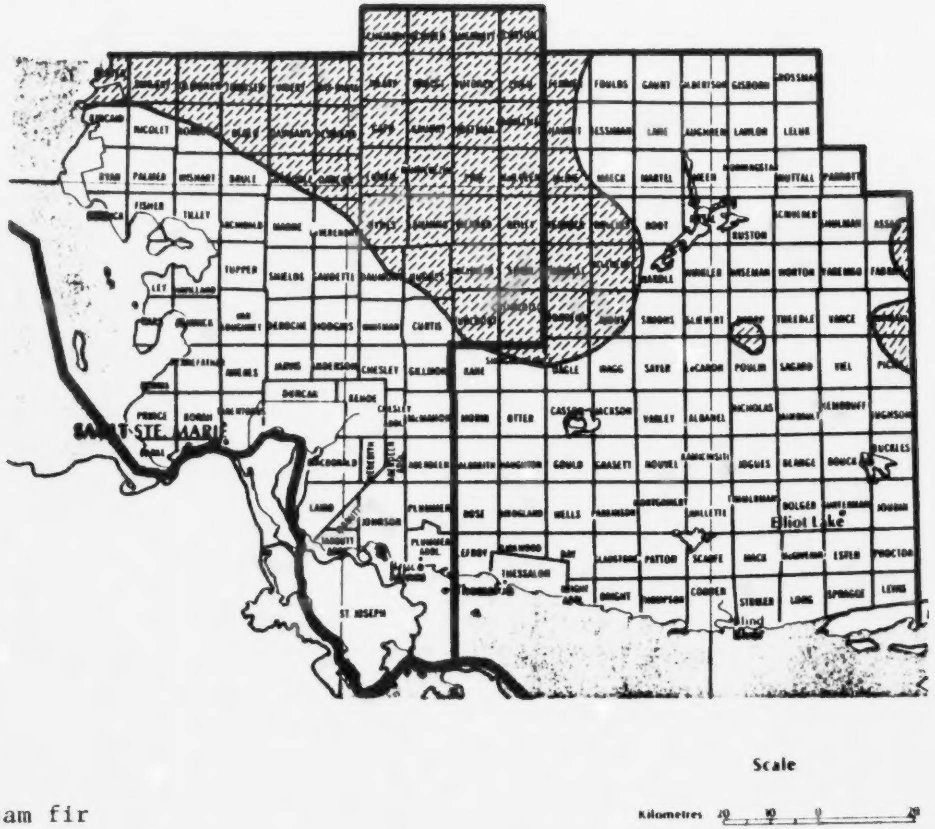
Spruce Budworm

Areas within which defoliation
occurred in 1978

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
THESSALON
Scale
Kilometres 20 10 0 20

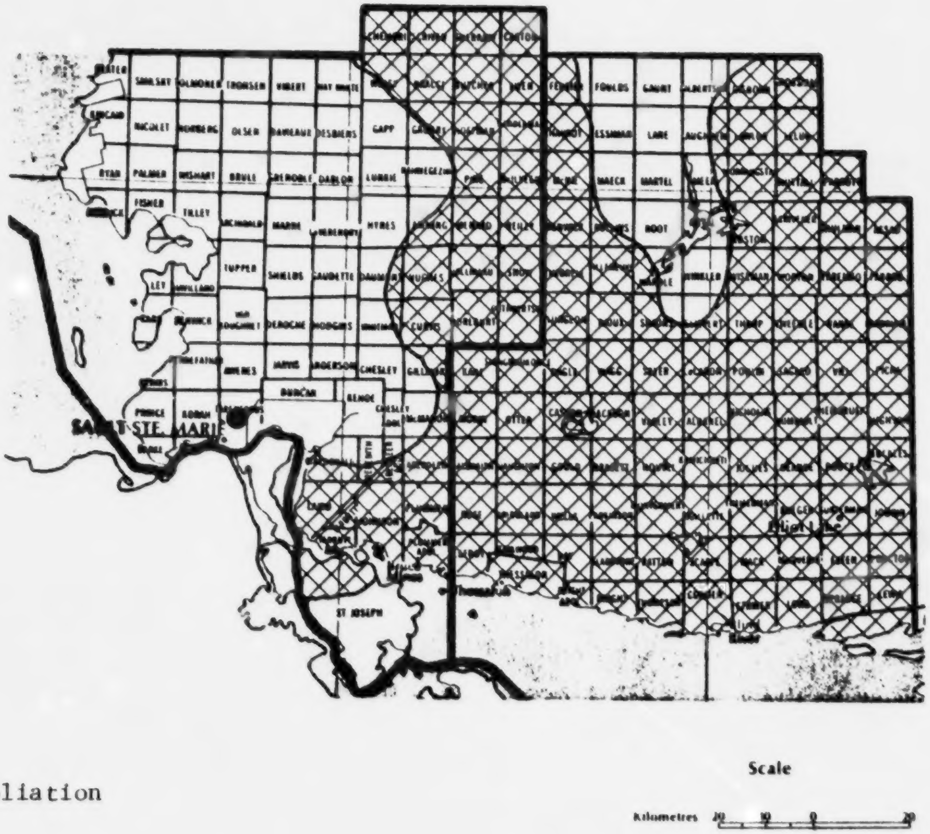
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1978

LEGEND

Mortality ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Blind Lake
Scale
Kilometres 20 10 0 20

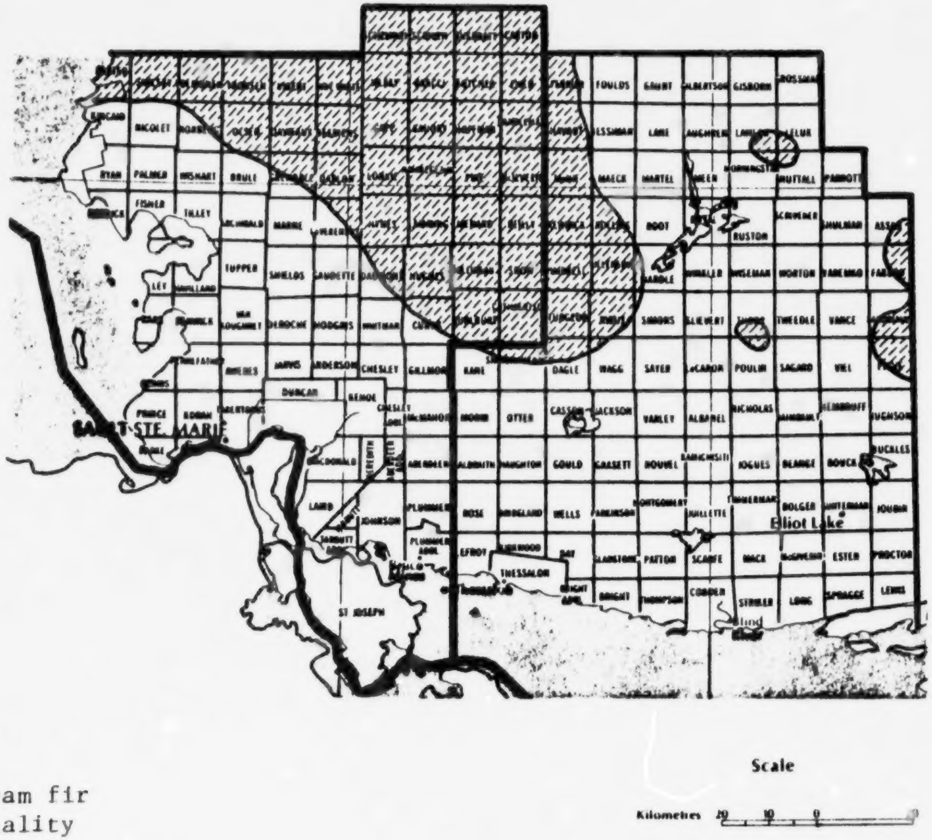
Spruce Budworm

Areas within which defoliation
occurred in 1979

LEGEND

Moderate-to-severe defoliation ● or ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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ST JOSEPH
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MARTEL
ROOT
RUSTON
NUTTALL
PARROTT
SCRIVENER
SHULMAN
RYAN
PALMER
WISHART
BRULE
FISHER
TILLEY
TUPPER
SHIELDS
GAUDETTE
WISEMAN
WORTON
TWEEDLE
VANCE
SIMONS
SAYER
POULIN
SAGARD
VIEL
DAGLE
WAGG
KANE
OTTER
JACKSON
VARLEY
NICHOLAS
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JOGUES
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PROCTOR
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MACK
HODGINS
DEROCHE
JARVIS
ANDERSON
CHESLEY
GILLMOR
DUNCAN
ROSE
WELLS
PLUMMER
LAIRD
JOHNSON
MEREDITH
ABERDEEN
DAY
LEFROY
Scale
Kilometres 20 10 0

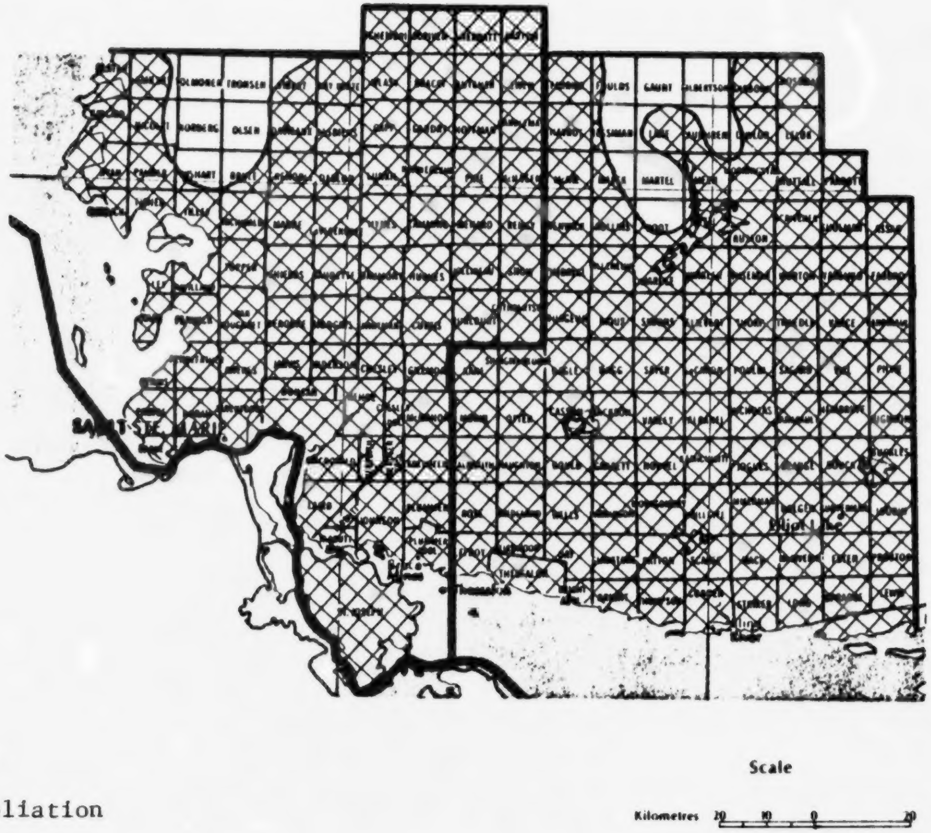
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1979

LEGEND

Mortality ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Scale
Kilometres 20 10 0 20

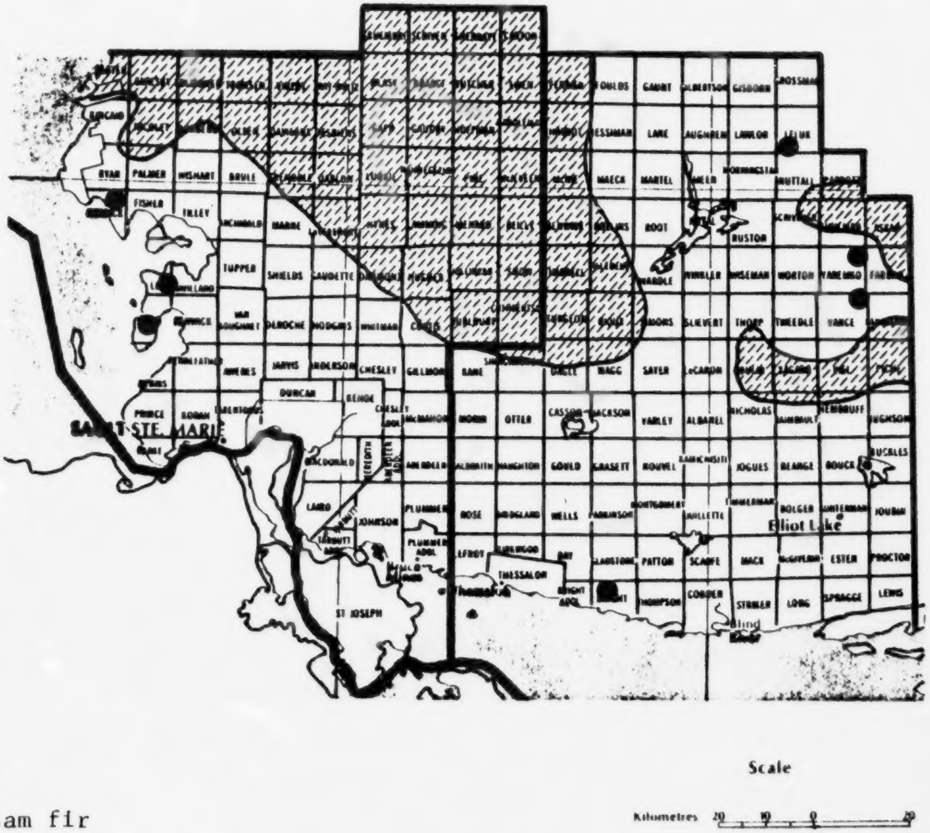
Spruce Budworm

Areas within which defoliation
occurred in 1980

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
THESSALON
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DUNCAN
TUPPER
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FISHER
TILLEY
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GOULD
OTTER
ALBANEL
NICHOLAS
JOGUES
BOLGER
ESTER
PROCTOR
LONG
SPRAGGE
LEWIS
PATTON
SCARFE
MACK
MARTEL
ROOT
RUSTON
WORTON
VANCE
TWEEDLE
SAYER
WELLS
ROSE
JOHNSON
LAIRD
MACDONALD
Scale
Kilometres 20 10 0 20

Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1980

LEGEND

Mortality ● or ▨

Jack Pine Budworm, *Choristoneura pinus pinus* Free.

Host(s): pines [Major]

Year	Remarks
1950-1959	not reported
1960-1964	low populations in the district
1965	numerous larvae collected in Jocelyn Twp; an extremely high number of adults observed in the city of Sault Ste. Marie
1966	Major increases in infestations occurred in Parke Twp, in the city of Sault Ste. Marie, and along the North Channel to Bruce Mines.
1967	continued high populations in Parke Twp and the city of Sault Ste. Marie; lighter infestations along the North Channel between Echo Bay and Bruce Mines
1968	There was a decline in infestation at most locations sampled. Populations were lower in Parke Twp.
1969-1970	very low populations in Parke Twp
1971-1980	not reported

Larch Casebearer, *Coleophora laricella* (Hbn.)

Host(s): tL

Year	Remarks
1950	not reported
1951	moderate infestation in Parke Twp
1952	severe defoliation in Fenwick, Plummer and Parke twps
1953	sharp decline in populations in Fenwick and Plummer twps
1954	an increase in infestation in Fenwick, Plummer and Parke twps
1955	a marked decline in populations in Fenwick, Plummer and Parke twps
1956	very low populations in Parke, Fenwick and Plummer twps
1957	low populations in Garden River Indian Reserve and Parke and Plummer twps
1958-1966	very low populations in the district
1967	Populations increased in Garden River Indian Reserve and in Parke and Ryan twps.
1968	Severe defoliation occurred in a 2-ha stand of mature larch in the Garden River Indian Reserve. Low populations were observed at other locations.
1969	Severe defoliation persisted in the Garden River Indian Reserve. Low populations occurred at numerous other locations.
1970	a marked decline in populations in the Garden River Indian Reserve
1971-1973	Low populations persisted in the Garden River Indian Reserve.
1974	an increase in infestation in the Garden River Indian Reserve
1975	a further increase in populations in Garden River Indian Reserve
1976-1980	Low populations persisted in Garden River Indian Reserve and Jocelyn Twp.

Oak Leaf Shredder, *Croesia semipurpurana* (Kft.)

Host(s): oak [Major]

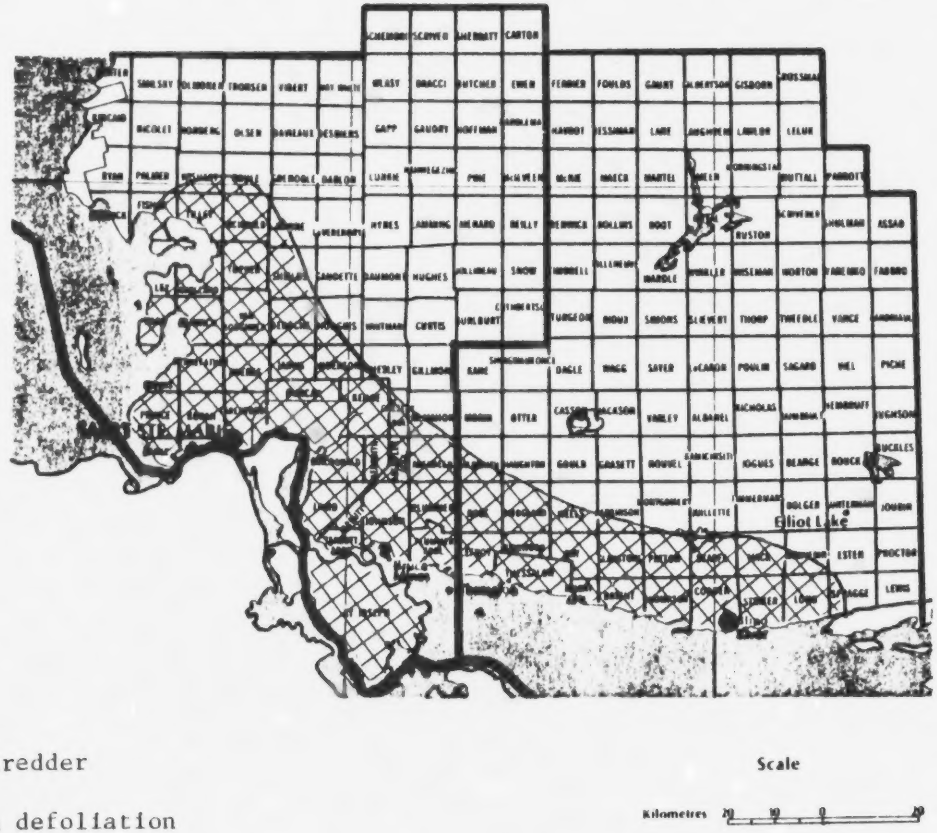
Year	Remarks
1950-1957	not reported
1958	Severe defoliation of red oak stands occurred in Prince Twp.
1959	Populations increased in Prince Twp.
1960	The infestation expanded in Prince and Parke twps and east to the city of Sault Ste. Marie.
1961-1962	Severe defoliation persisted in Parke and Prince twps and in Sault Ste. Marie.
1963	The area of infestation increased in Prince, Parke, Pennefather and Dennis twps. Some twig mortality of red oak trees occurred in Prince and Parke twps.
1964	Pockets of severe defoliation persisted in stands from Gros Cap on Lake Superior to the Garden River Indian Reserve.
1965	Infestations declined to small scattered pockets of severe defoliation in stands in Prince and Tarbutt twps and in Sault Ste. Marie.
1966	Moderate-to-severe defoliation recurred on hilltops and ridges in Prince and Tarbutt twps.
1967-1970	continued moderate-to-severe defoliation in Parke and Prince twps
1971	moderate-to-severe defoliation in the Sault Ste. Marie area
1972	increased infestation in the Sault Ste. Marie area, extending eastward to Bruce Mines
1973	There was a decline from heavy-to-moderate defoliation in the Sault Ste. Marie area.
1974	Light defoliation occurred on St. Joseph Island and in the Garden River Indian Reserve.

(cont'd)

Oak Leaf Shredder, *Croesia semipurpurana* (Kft.) (concl.)

Year	Remarks
1975	Severe defoliation occurred between Batchawana Bay and the southeastern boundary of the district (see map, page 46).
1976	Severe defoliation persisted in the district (see map, page 47).
1977	There was a decline in populations, with only scattered pockets of severe defoliation in the southern part of the district.
1978	low populations in Parke Twp
1979	a small pocket of severe defoliation observed in Jocelyn Twp
1980	Population increases occurred in the Sault Ste. Marie area and on St. Joseph Island.

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


Elliot Lake
Scale
Kilometres 20 10 0 20

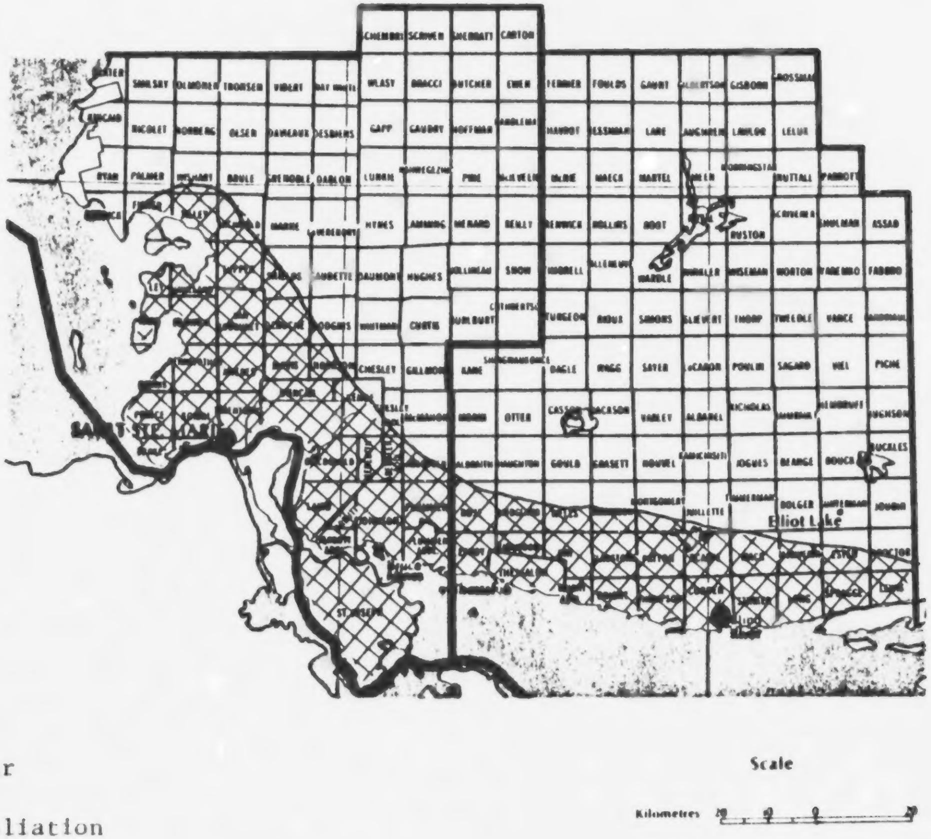
Oak Leaf Shredder

Areas within which defoliation
occurred in 1975

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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FOULDS
GAUNT
GILBERTSON
GISBORN
GROSSMAN
NICOLET
NORBERG
OLSER
DAMEAUX
DESBIENS
GAPP
GAUDRY
HOFFMAN
LANE
LAUGHREN
LAWLOR
LELUK
RYAN
PALMER
BOULE
GRENOBLE
DABLON
LUNKIN
PINE
McVEIGH
MAECK
MARTEL
NUTTALL
PARROTT
HYNES
HENARD
REILLY
HOLLIS
ROOT
RUSTON
SHULMAN
ASSAD
DAUMONT
HUGHES
SNOW
MARBLE
WISEMAN
NORTON
FABBRO
COGHIS
CURTIS
HURLBURT
CUTHBERTSON
STURGEON
SIMONS
THORP
TWEEDLE
VANCE
CHESLEY
GILLMOR
KANE
DAGLE
WAGG
SAYER
POULIN
SAGARD
VIEL
PICHE
OTTER
CASSON
JACKSON
VARLEY
ALBANEL
NICHOLAS
GOULD
GRASETT
ROUVEL
JOGUES
BOUCK
BOLGER
JOUBIN
Elliot Lake
SAULT STE. MARIE
Scale
Kilometres

Oak Leaf Shredder

Areas within which defoliation occurred in 1976

LEGEND

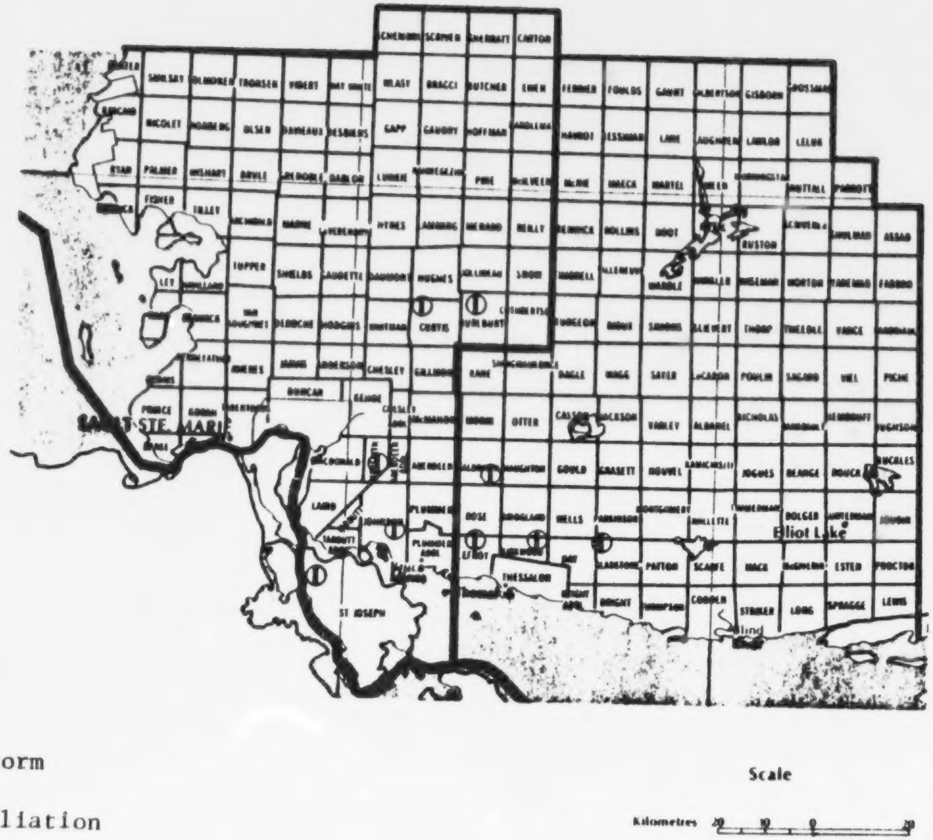
Moderate-to-severe defoliation ▨

Greenstriped Mapleworm, *Dryocampa rubicunda rubicunda* (Fabr.)

Host(s): maple [Major]

Year	Remarks
1950	not reported
1951	Light infestations occurred near Lonely Lake, MacDonald Twp.
1952	not reported
1953	few larvae found in Gaudette Twp
1954	medium infestation near Montreal River; light infestations adjacent to Batchawana Bay, in Jarvis and Duncan twps and in the northern part of St. Joseph Island
1955	lower populations than in the 1954 infestations
1956	light infestations between Batchawana Bay and Montreal River and in the St. Joseph Island area (see map, page 49).
1957	Light infestations persisted between Sault Ste. Marie and Montreal River (see map, page 50).
1958-1959	very low populations
1960-1965	not reported
1966	increase in larval populations on St. Joseph Island
1967-1971	not reported
1972	occasional colonies observed in Aweres Twp
1973-1975	not reported
1976	high populations on St. Joseph Island
1977	decline in populations on St. Joseph Island
1978-1979	Light defoliation occurred in Jocelyn and Laird twps.
1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind
THESSALON
Scale
Kilometres 20 10 0 20

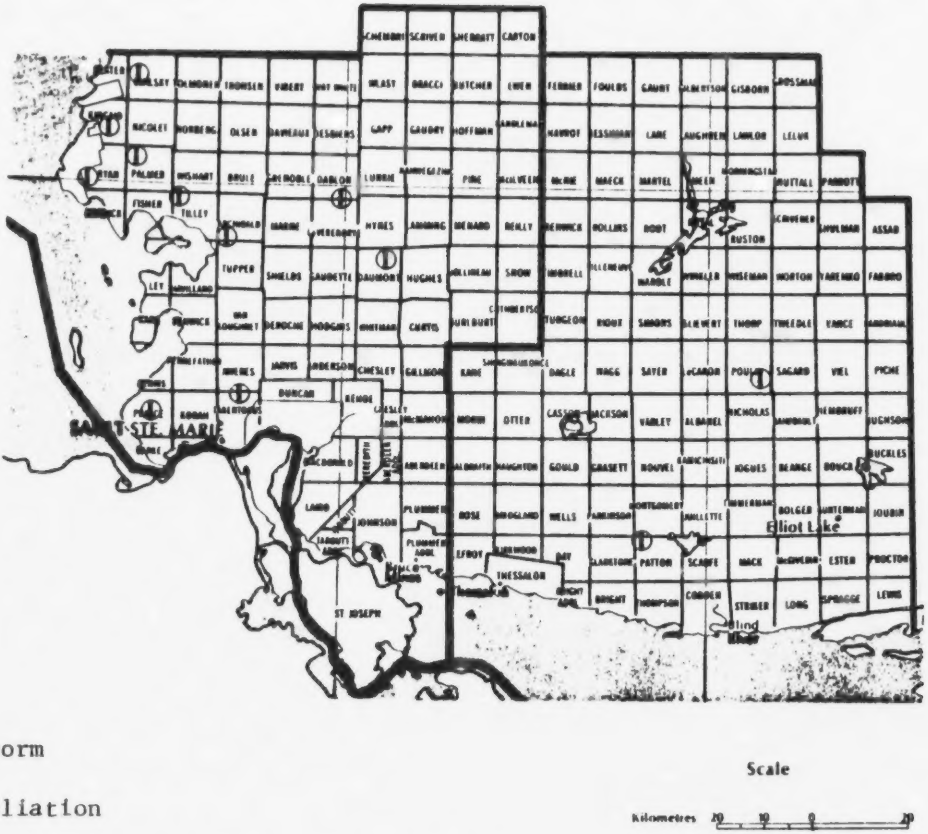
Greenstriped Mapleworm

Areas within which defoliation occurred in 1956

LEGEND

Light defoliation ⦶

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
THESSALON
Scale
Kilometres 20 10 0 20

Greenstriped Mapleworm

Areas within which defoliation occurred in 1957

LEGEND

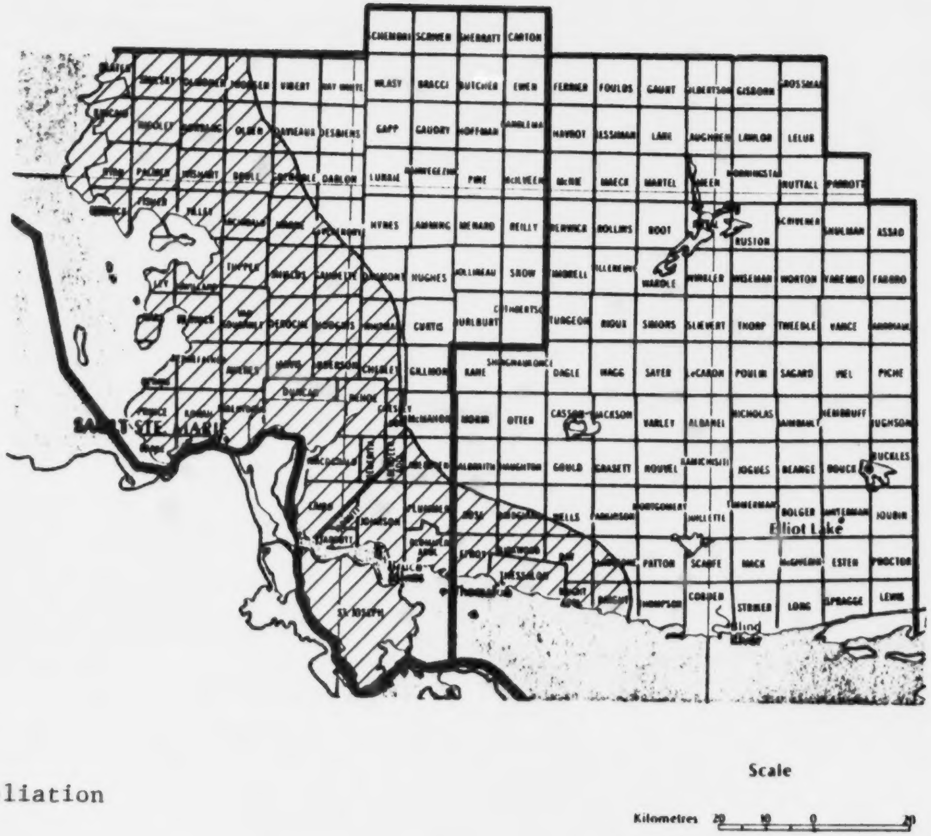
Light defoliation ⦶

Linden Looper, *Erannis tiliaria* (Harr.)

Host(s): deciduous [Major]

Year	Remarks
1950	Population increases occurred in Aweres, Aberdeen, Hilton and Jocelyn twps.
1951	low populations in the district
1952	Moderate defoliation occurred in Fisher and Plummer twps.
1953	A light infestation persisted in Fisher Twp.
1954	Medium infestations occurred in Jocelyn, Fisher and Palmer twps; light infestations were widespread between Sault Ste. Marie and Montreal River.
1955	Infestation declined to low levels.
1956	Few larvae were found on St. Joseph Island.
1957-1961	not reported
1962	moderate defoliation in Curtis Twp
1963	Moderate defoliation persisted in Curtis Twp and was observed between Goulais River and Slater Twp.
1964-1970	not reported
1971	Low populations occurred in the city of Sault Ste. Marie.
1972-1974	not reported
1975	Light infestations occurred in the western and southern parts of the district (see map, page 52).
1976	A large area of severe defoliation occurred in the northeastern part of the district (see map, page 53).
1977	a drastic decline in populations in the district
1978-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

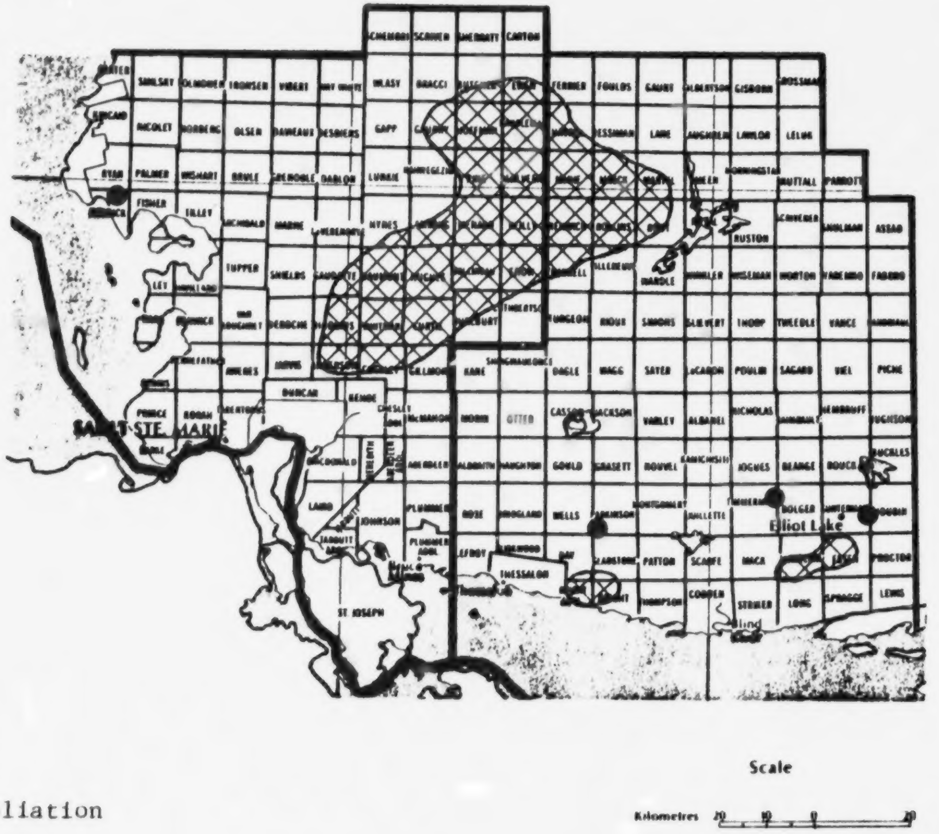
Linden Looper

Areas within which defoliation occurred in 1975

LEGEND

Light defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind
Scale
Kilometres 20 10 0 20

Linden Looper

Areas within which defoliation occurred in 1976

LEGEND

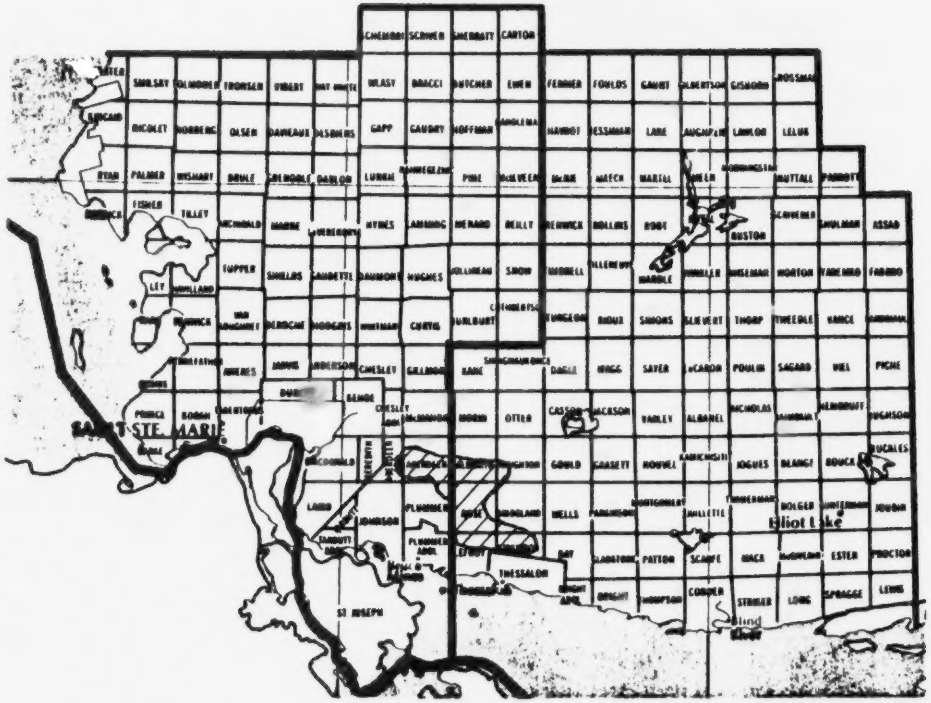
Moderate-to-severe defoliation ● or ▨

European Spruce Sawfly, *Gilpinia hercyniae* (Htg.)

Host(s): spruce [Minor]

Year	Remarks
1950	Light defoliation persisted on white spruce in parts of Aberdeen and Plummer twps (see map, page 55).
1951	higher populations observed in Plummer Twp
1952	increase in populations in Plummer, Aberdeen and McMahon twps (see map, page 56)
1953	light infestation on white spruce in Plummer Twp
1954	Light infestations persisted in the district.
1955	a decline in populations
1956	a few larvae observed in Plummer and Aberdeen twps
1957	a few larvae observed in Plummer Twp
1958	Low populations persisted in the eastern part of the district.
1959	Light infestations were observed further west in the district.
1960	slight population increases at sample locations
1961-1967	Low populations persisted at sample locations.
1968-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
THESSALON
ST JOSEPH
Scale
Kilometres 20 10 0 20

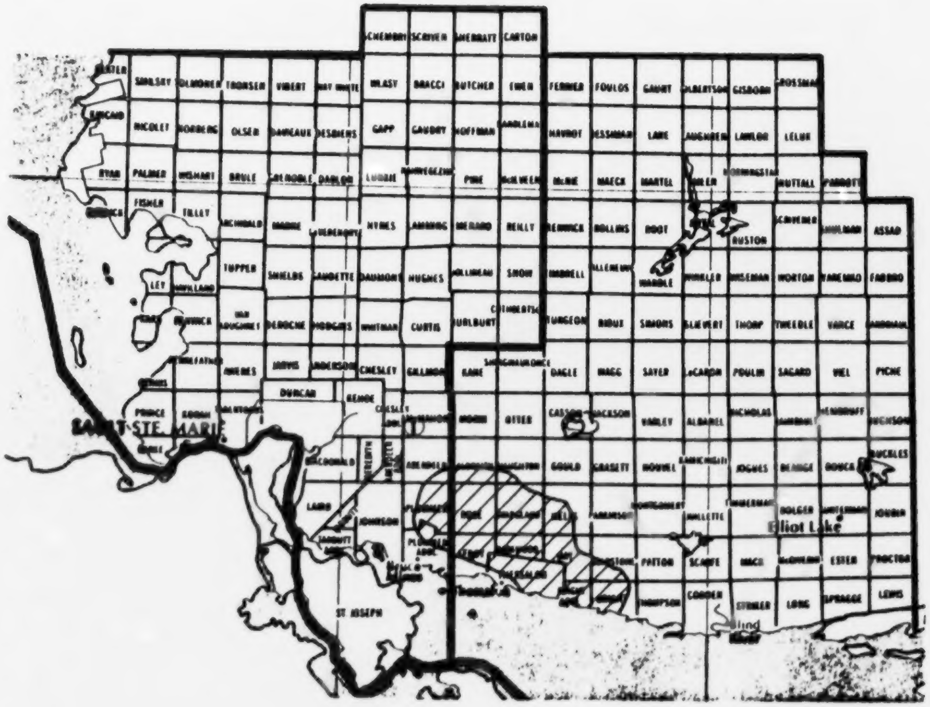
European Spruce Sawfly

Areas within which defoliation
occurred in 1950

LEGEND

Light defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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FERRIER
FOULDS
GAUNT
GISBORN
GROSSMAN
NICOLET
NORBERG
OLSEN
DANGEAUX
DESBIENS
GAPP
GAUDRY
HOFFMAN
HAVROT
LAKE
LAWLOR
LELUK
RYAN
PALMER
BRULE
PINE
MACK
MARTELL
NUTTALL
PARROTT
FISHER
TILLEY
ARCHIBALD
HYNES
MERARD
REILLY
ROLLINS
ROOT
RUSTON
ASSAD
TUPPER
SHIELDS
GAUDETTE
DAUMONT
HUGHES
SHOW
MARBLE
WHEELER
MORTON
FABBRO
LEY
HOLLAND
VAN KOUGHNET
HODGINS
WHITMAN
CURTIS
HURLBURT
CUTHBERTSON
STURGEON
RIOUX
SHAMS
THORP
TWEEDLE
VANCE
ANDRES
JARVIS
ANDERSON
CHESLEY
GILLMOR
KANE
DAGLE
WAGG
SAYER
LeCARON
POULIN
SAGARD
WEL
PICHE
DUNCAN
PRINCE
SAULT STE. MARIE
MACDONALD
LAIRD
JOHNSON
OTTER
CASSON
JACKSON
VARLEY
ALBANEL
NICHOLAS
HEMBRUFF
GOULD
GRASETT
JOGUES
BOUCK
BUCKLES
HALLETTE
BOLGER
JOUBIN
Elliot Lake
PATTON
SCARFE
MACK
ESTEN
PROCTOR
THOMPSON
CORDEN
STRIKER
LONG
SPRAGUE
LEWIS
Blind River
ST JOSEPH

Scale

Kilometres 20 10 0 20

European Spruce Sawfly

Areas within which defoliation occurred in 1952

LEGEND

Light defoliation Ⓛ or ▨

Hemlock Looper, *Lambdina fiscellaria fiscellaria* (Gn.)

Host(s): bF, He, eC [Major]

Year	Remarks
1950	low numbers of larvae on beating tray samples throughout the southern part of the district
1951	numerous larvae observed in MacDonald, Reilly, Parke and Aberdeen twps
1952	few larvae on beating tray samples in Parke and MacDonald twps
1953	low populations in Tilley and Slater twps
1954-1960	Low populations persisted in Tilley and Slater twps.
1961	population increases on St. Joseph Island
1962	decline in populations on St. Joseph Island
1963-1980	not reported

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Host(s): tA, sM, rO [Major]

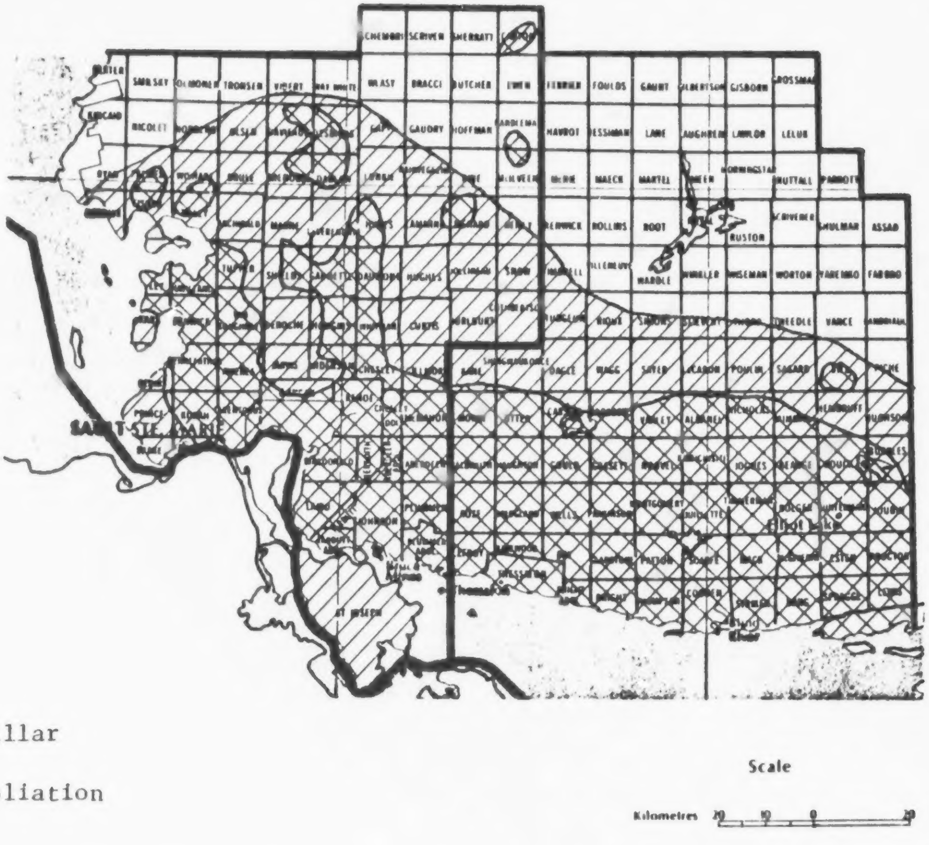
Year	Remarks
1950	Moderate-to-severe defoliation persisted throughout the southern part of the district, with scattered pockets of defoliation in the northern part. Light defoliation occurred on St. Joseph Island and between the pockets of severe defoliation (see map, page 60).
1951	a general increase in populations to the north of the 1950 infestation (see map, page 61)
1952	Moderate-to-severe defoliation persisted in the northern part of the district and declined in the southern part (see map, page 62).
1953	There was a general decline in infestation; moderate-to-severe defoliation persisted at three locations in the district (see map, page 63).
1954-1958	not reported
1959-1960	a few larvae observed in the district
1961-1963	not reported
1964	larvae observed commonly south of a line between Echo Bay and Ophir (see map, page 64)
1965	Moderate-to-severe defoliation occurred over an area of 2300 km^2 in the southern part of the district (see map, page 65).
1966	little change in infestation boundaries; continued moderate-to-severe defoliation in the Echo Bay area (see map, page 66)
1967	increase in infestation in the Sylvan Valley-Gordon Lake area (see map, page 67)
1968	A decline in area of infestation occurred in the Gordon Lake-Echo Bay area (see map, page 68).
1969-1973	not reported

(cont'd)

Forest Tent Caterpillar, *Malacosoma disstria* Hbn. (concl.)

Year	Remarks
1974	low numbers general in the district
1975	not reported
1976	Pockets of severe defoliation occurred in Laird and Jocelyn twps.
1977	Increased populations caused moderate-to-severe defoliation south of a line between Echo Bay and Bruce Mines (see map, page 69).
1978	Lower populations were observed in Laird and MacDonald twps.
1979-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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SHERRATT
SMILSKY
O'CONNOR
TRONSEN
VIBERT
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WLAST
BRACCI
DUTCHER
EWEN
FOULDS
GAUNT
GILBERTSON
GISBORN
GROSSMAN
NICOLET
GAUDRY
HOFFMAN
HAVROT
LANE
LAUGHREN
LAWLOR
LELUE
McILVEEN
MAECK
MARTEL
HORNINGSTAR
NUTTALL
PARROTT
ROLLINS
ROOT
RUSTON
SCRIVENER
SHULMAR
ASSAD
HUGHES
TUPPER
VILLENEUVE
WARDLE
WHELLER
WISEMAN
WORTON
FARENKO
FABBRO
HURLBURT
CURTIS
VANCE
STEEDLE
PLAGUE
WAGG
SAGARD
PICHE
HUDSON
ALBANEL
NICHOLAS
JOGUES
WELLS
MONTGOMERY
ESTEN
PATTON
COMMON
SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

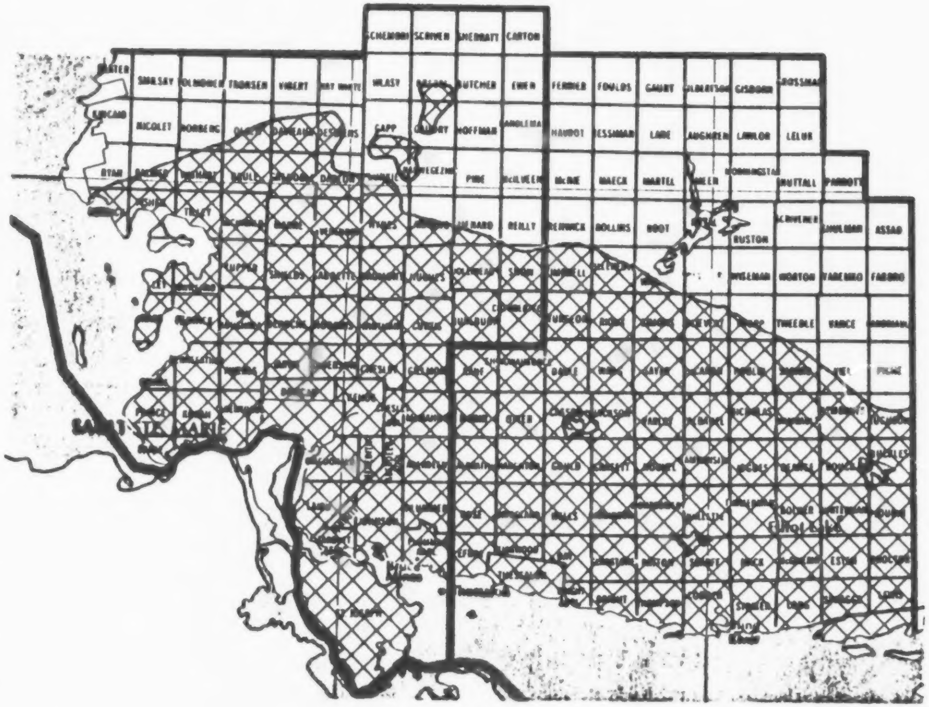
Areas within which defoliation occurred in 1950

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS



Scale

Kilometres 20 10 0 20

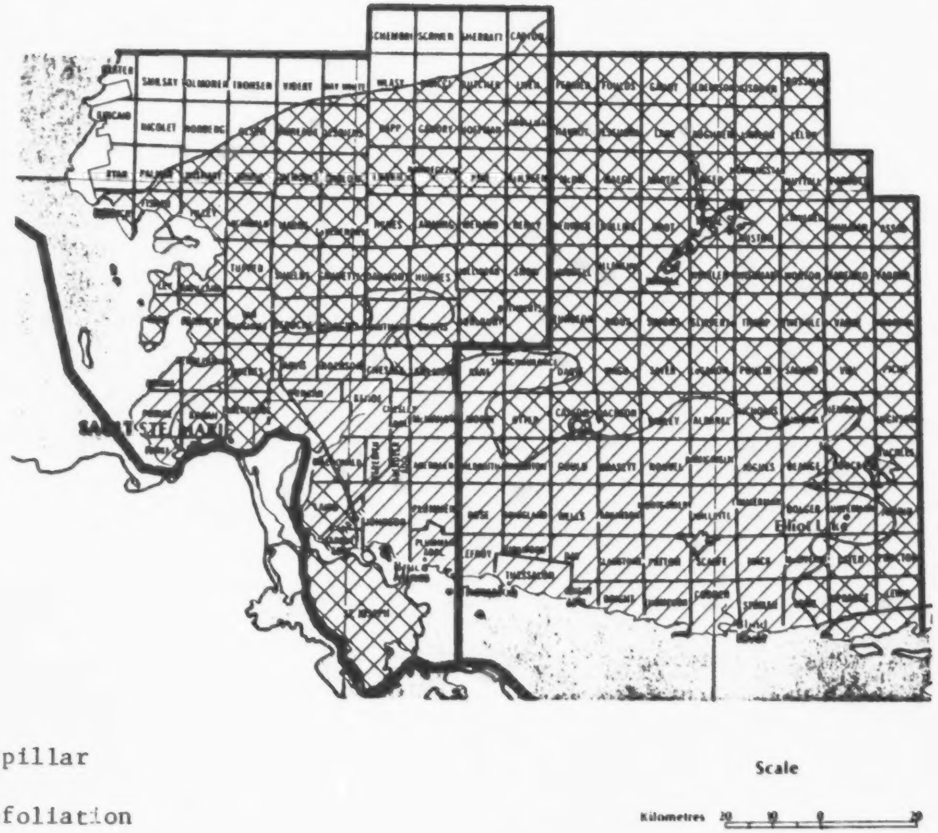
Forest Tent Caterpillar

Areas within which defoliation occurred in 1951

LEGEND

Moderate-to-severe defoliation ▨

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

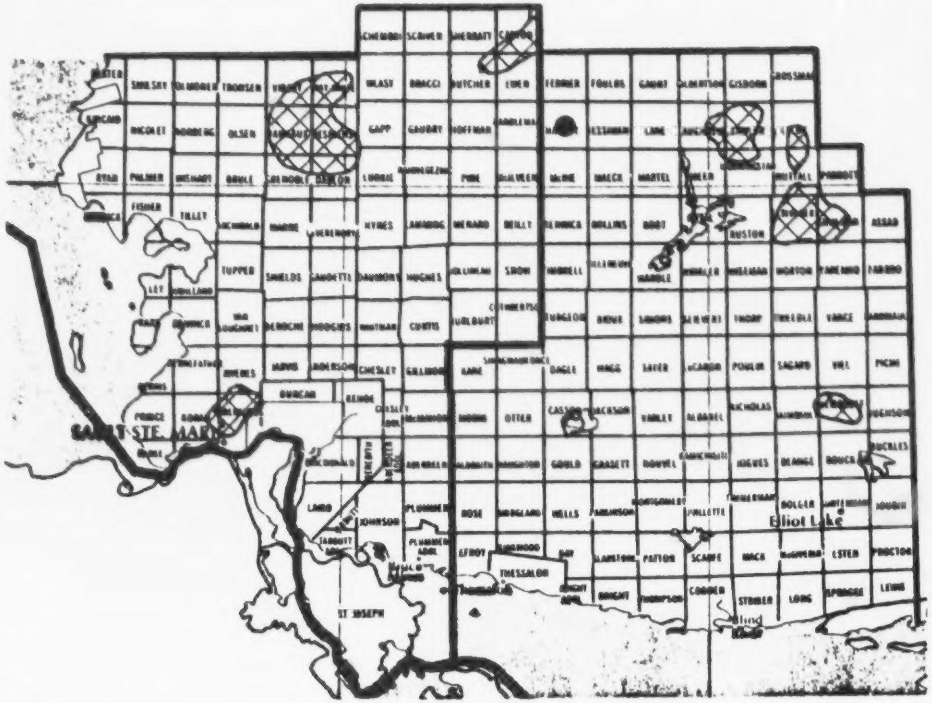
Areas within which defoliation occurred in 1952

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
THESSALON
ST JOSEPH
Blind River

Forest Tent Caterpillar

Areas within which defoliation
occurred in 1953

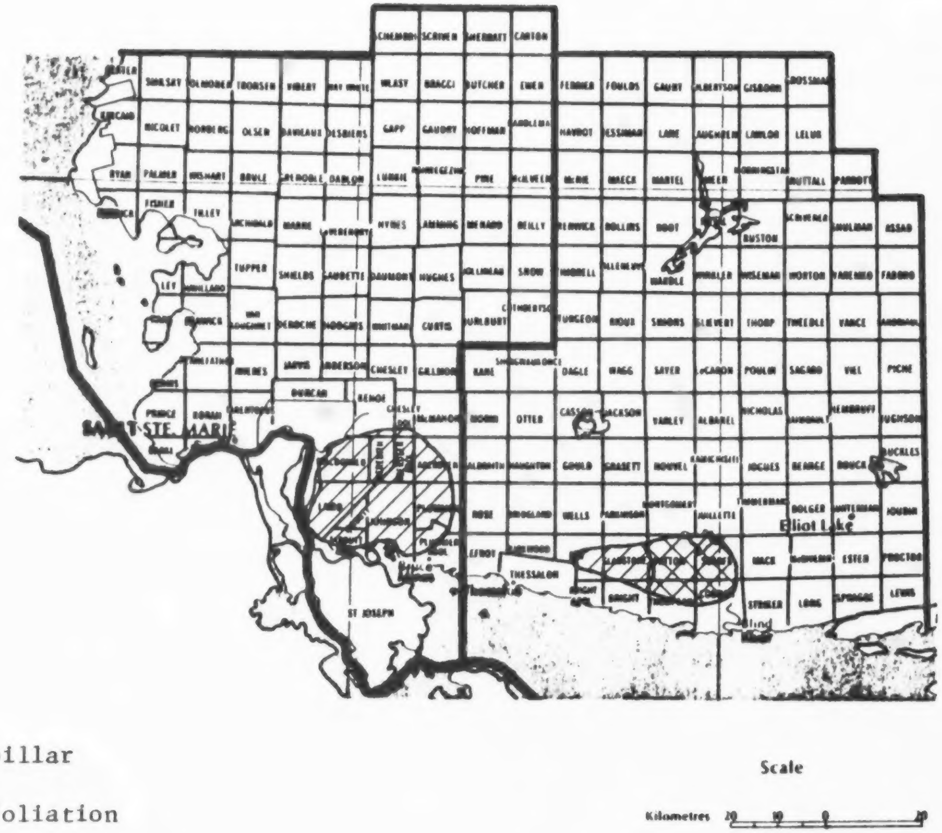
LEGEND

Moderate-to-severe defoliation ● or ▨

Scale

Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
THESSALON
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

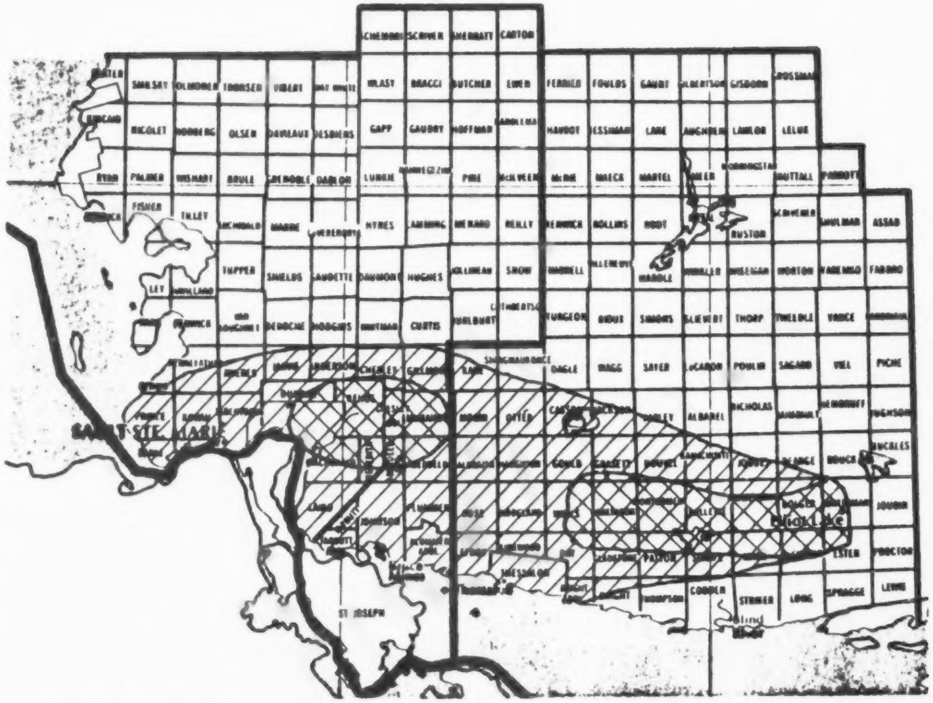
Areas within which defoliation
occurred in 1964

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Blind River

Forest Tent Caterpillar

Areas within which defoliation
occurred in 1965

LEGEND

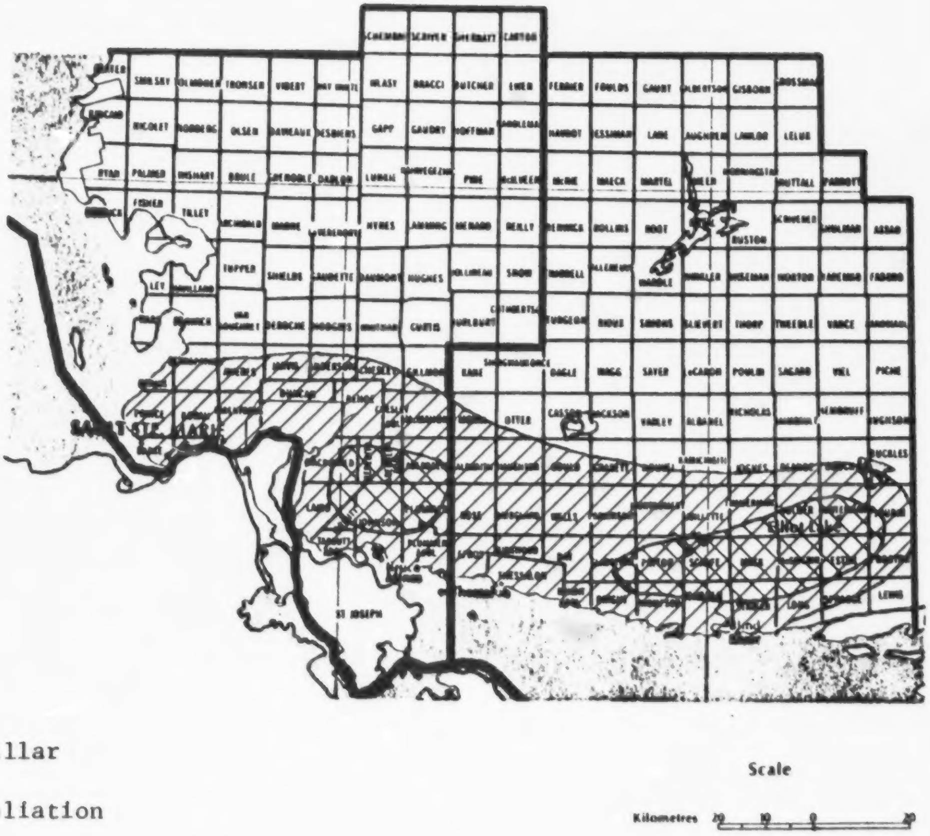
Light defoliation ▨

Moderate-to-severe defoliation ▦

Scale

Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

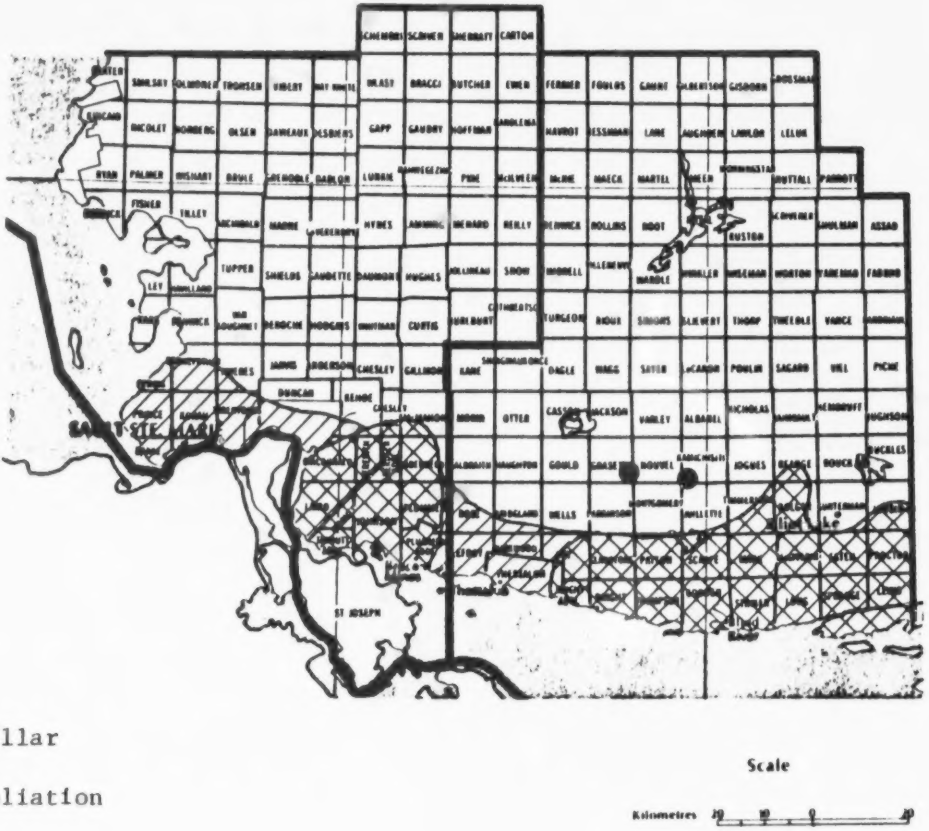
Areas within which defoliation
occurred in 1966

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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HOFFMAN
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LAWLOR
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MAECK
MARTEL
FISHER
TILLEY
HYNES
REILLY
ROLLINS
ROOT
RUSTON
ASSAD
TUPPER
SHIELDS
GAUDETTE
HUGHES
NORTON
FABBRO
DEROCHE
HODGINS
CURTIS
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TURGEON
RIOUX
SIMONS
THORP
VANCE
ANDERSON
CHESLEY
KANE
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DUNCAN
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CASSON
JACKSON
VARLEY
ALBANEL
NICHOLAS
GOULD
JOGUES
BUCKLES
WELLS
MONTGOMERY
SAULT STE. MARIE
ST JOSEPH
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

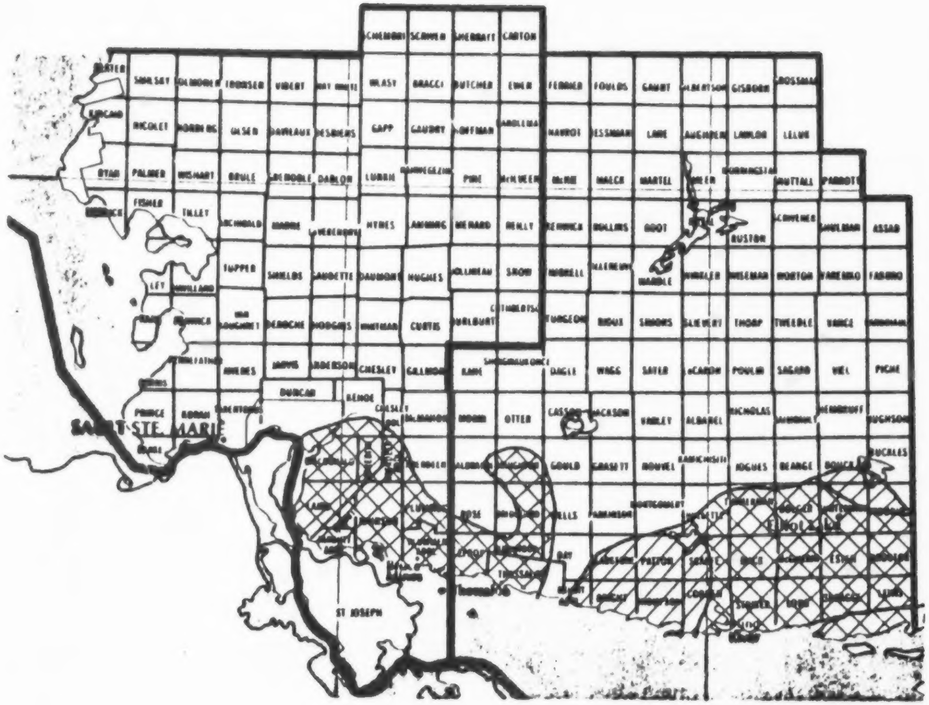
Areas within which defoliation occurred in 1967

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ● or ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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GAUNT
GILBERTSON
GISBORN
NICOLET
GAPP
GAUDRY
HOFFMAN
LAMB
LAWLOR
LELLIE
RYAN
PALMER
WISHART
BOULE
DABLON
LUBAN
PINE
McRAE
MAGCK
MARTEL
NUTTALL
PARROTT
FISHER
TILLEY
HYNES
MENARD
REILLY
RENNICK
ROLLINS
ROOT
BUSTON
ASSAD
TUPPER
SHIELDS
GAUDETTE
DAUMONT
HUGHES
SHOW
MORRELL
MARBLE
WHEELER
WISEMAN
MORTON
FABBRO
DEROCHE
HODGINS
CURTIS
HURLBURT
TURGEON
RIOUX
SIMONS
THORP
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PRINCE
KORAH
MOORE
OTTER
JACKSON
VARLEY
ALBAREL
NICHOLAS
HEMBRUFF
HUGHSON
GOULD
GRASETT
ROUVEL
JOGUES
BEARGE
BUCKLES
ROSE
WELLS
BAY
PATTON
ESTEN
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

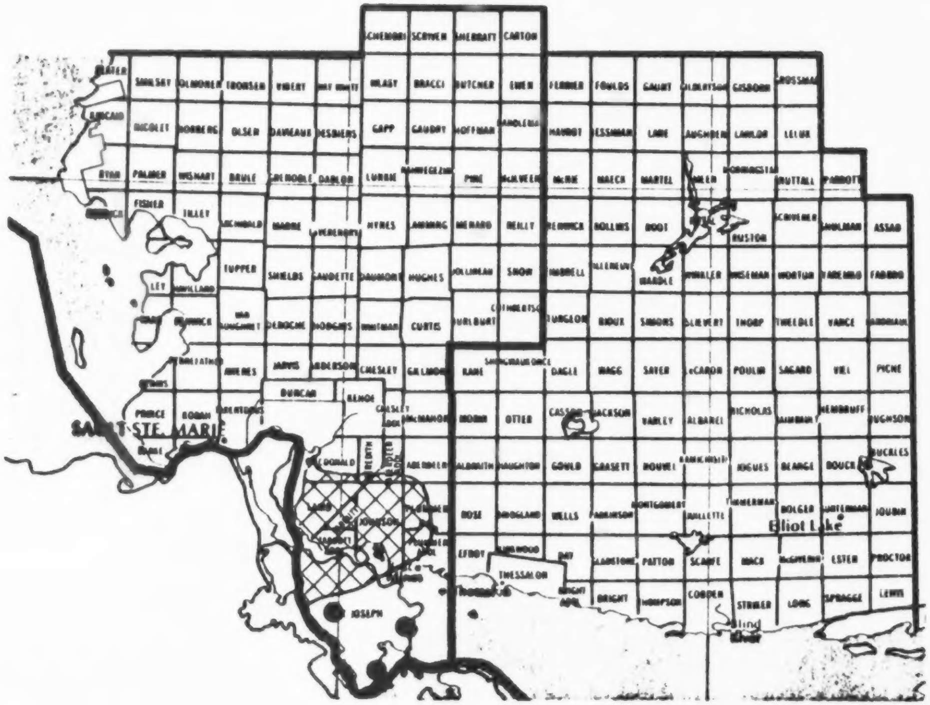
Areas within which defoliation occurred in 1968

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
THESSALON
Blind River
JOSEPH
Scale
Kilometres 20 10 0 20

Forest Tent Caterpillar

Areas within which defoliation
occurred in 1977

LEGEND

Moderate-to-severe defoliation ● or ▨

Balsam-fir Sawfly, *Neodiprion abietis* complex

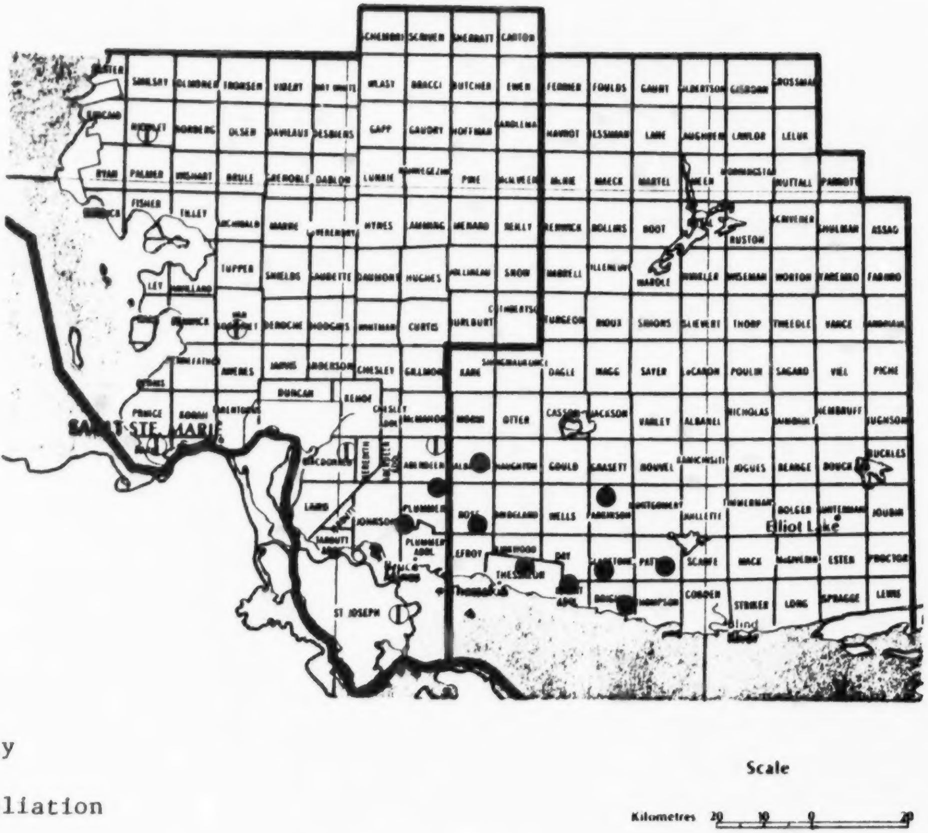
Host(s): bF, wS [Major]

Year	Remarks
1950	Severe defoliation of individual balsam fir trees occurred in Plummer and Plummer Additional twps (see map, page 72). Light defoliation was observed in Nicolet, VanKoughnet, Parke, Meredith and Hilton twps.
1951	Moderate-to-severe defoliation occurred near Sault Ste. Marie. Light defoliation was observed in four townships (see map, page 73).
1952	Moderate-to-severe defoliation persisted near Sault Ste. Marie. A moderate infestation was observed on St. Joseph Island (see map, page 74).
1953	Moderate defoliation occurred in Plummer Additional Twp. Light infestations were observed at eight other locations (see map, page 75).
1954	A decline in populations occurred throughout the district. Moderate defoliation was observed in Tilley Twp. Scattered pockets of light defoliation occurred in the remainder of the district (see map, page 76).
1955	very low populations recorded in the district
1956-1958	not reported
1959	Moderate-to-severe defoliation occurred in Plummer and Fisher twps. Light defoliation was observed at four other locations (see map, page 77).
1960	Moderate-to-severe defoliation persisted in Fisher Twp. Lower populations were observed in Plummer Twp (see map, page 78).
1961	There was a decline in populations in Fisher and Plummer twps.
1962	Pockets of moderate-to-severe defoliation occurred between Sault Ste. Marie and Montreal River.

Balsam-fir Sawfly, *Neodiprion abietis* complex (concl.)

Year	Remarks
1963	Infestations persisted between Goulais River and Montreal River.
1964	a sharp decline in populations between Goulais River and Montreal River
1965	few larvae observed in the district
1966-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
St Joseph
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Balsam Fir Sawfly

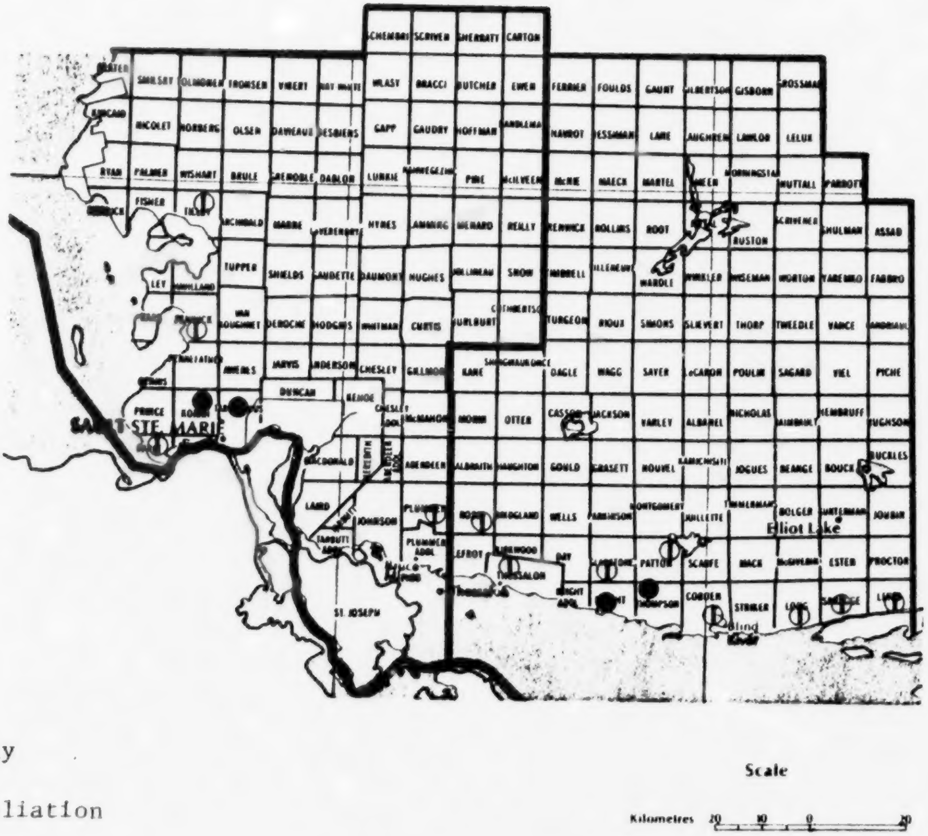
Areas within which defoliation
occurred in 1950

LEGEND

Light defoliation ⏀

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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ST. JOSEPH
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Balsam Fir Sawfly

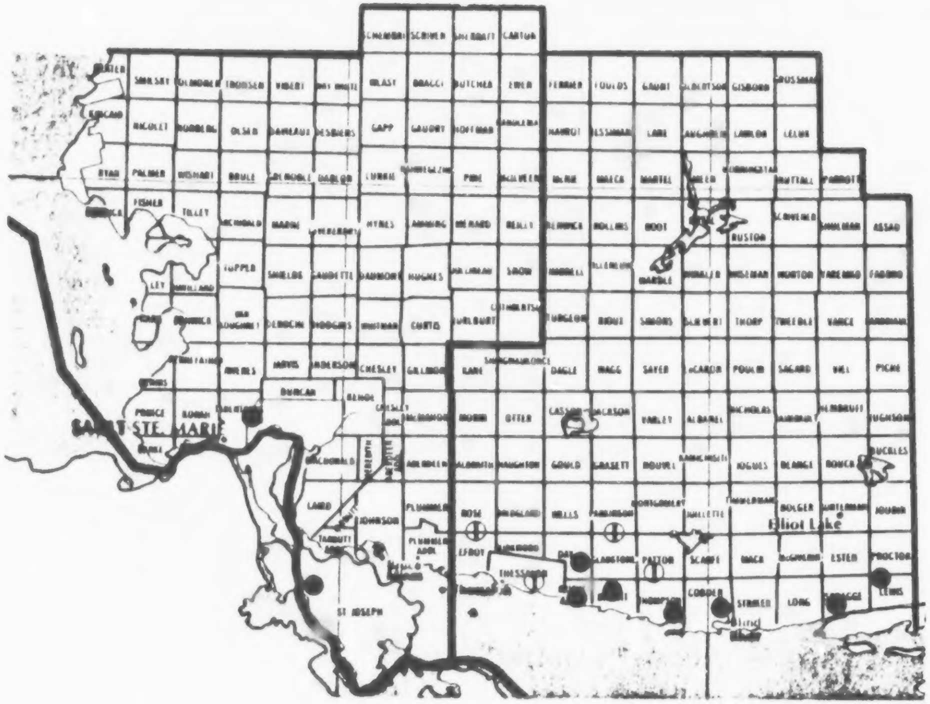
Areas within which defoliation occurred in 1951

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
Blind River
Scale
Kilometres 20 10 0 20

Balsam Fir Sawfly

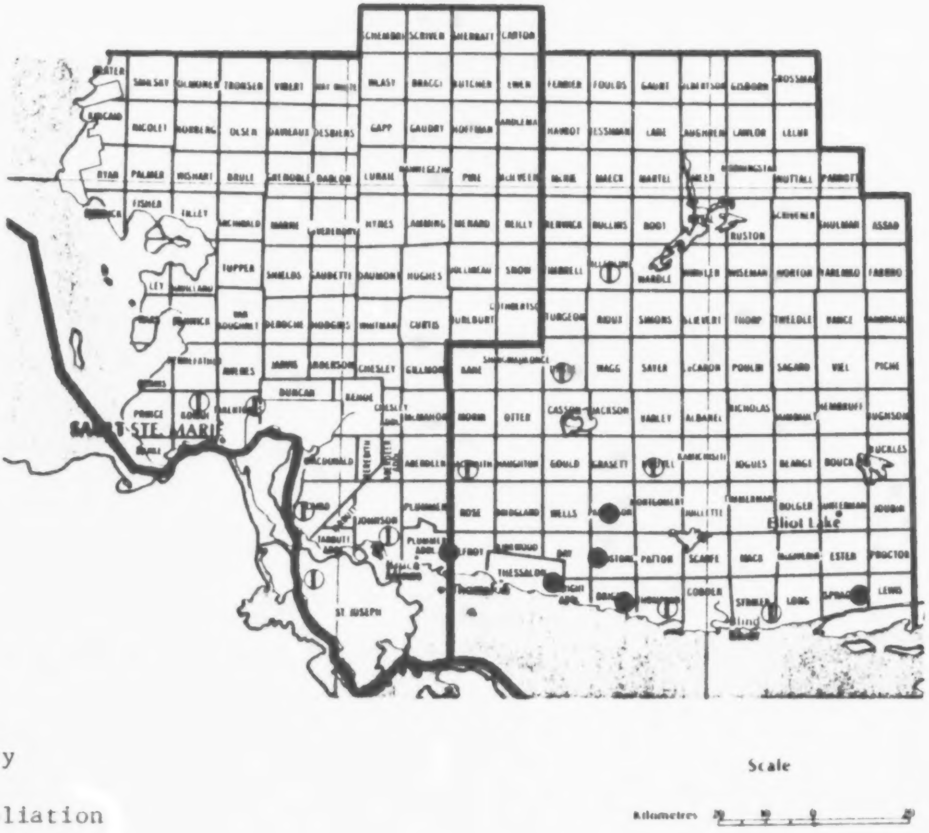
Areas within which defoliation
occurred in 1952

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
THESSALON
Scale
Kilometres

Balsam Fir Sawfly

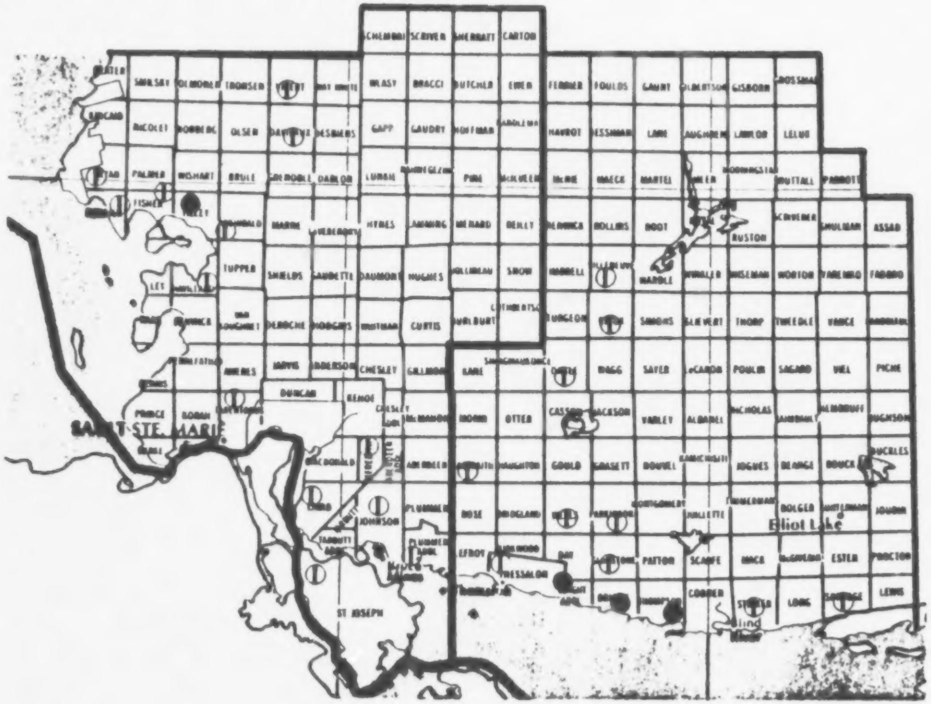
Areas within which defoliation
occurred in 1953

LEGEND

Light defoliation Ⓘ

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH

Balsam Fir Sawfly

Areas within which defoliation
occurred in 1954

LEGEND

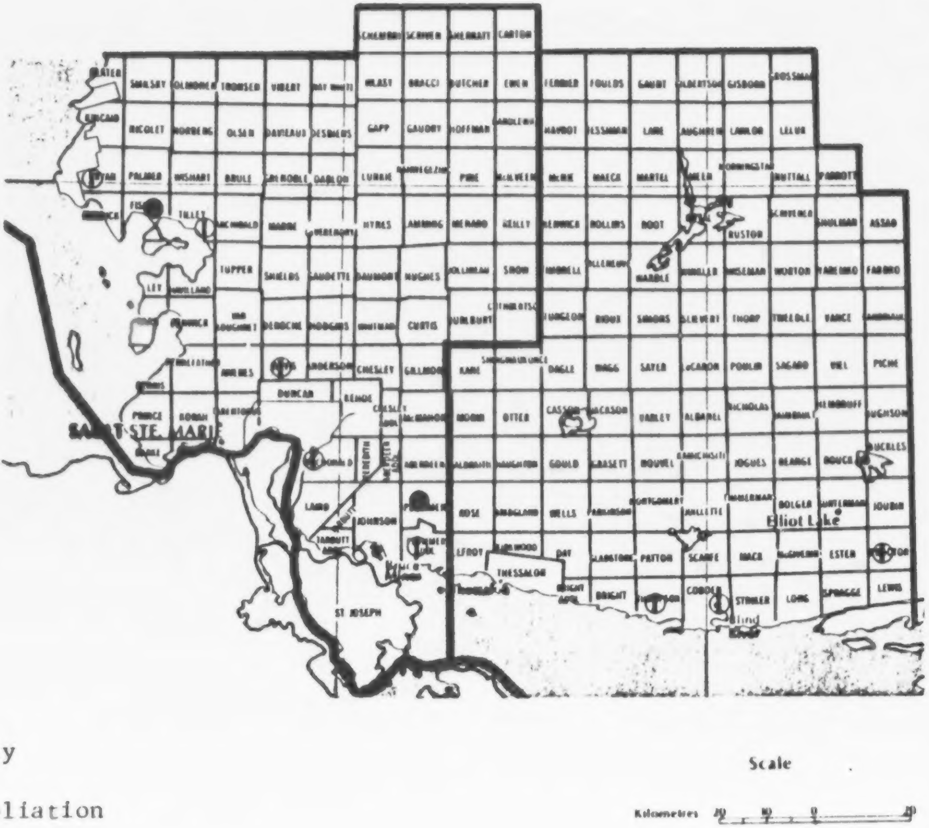
Light defoliation ⦶

Moderate-to-severe defoliation ◑

Scale

Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS



SMILSEY
OLMOMEN
TRONSEN
VIBERT
CHELMORRISON
SCRIVEN
SHERRATT
CARTON
BRACCI
DUTCHER
EWEN
FENWICK
FOULDS
GAUDET
ALBERTSON
GISBORN
GROSSMAN
KINCAID
NICOLET
NORBERG
OLSEN
DAVIEAUX
DESBIENS
GAPP
GAUDRY
HOFFMAN
LESSMAN
LANE
LAUGHREN
LAWLOR
LELUR
PALMER
WISHART
BRULE
LA NOBLE
DABLON
LURKIE
PINE
McILVEEN
MEHA
MAECK
MARTEL
NUTTALL
PARROTT
TILLEY
MCDONALD
HYRES
HERARD
REILLY
ROLLINS
ROOT
RUSTON
SCHUCHER
SHULMAN
ASSAD
TUPPER
SHIELDS
SAUDETTE
DAUMONT
HUGHES
SNOW
MARBLE
WISEMAN
WORTON
FABRO
DEROCHE
HODGINS
CURTIS
HURLBURT
RIOUX
SIMONS
SLIEVERT
THORP
VANCE
ANDERSON
CHESLEY
GILLMOR
KANE
DAGLE
WAGG
SAYER
LeCARON
POULIN
SAGARD
VIEL
PICHE
DUNCAN
KEHOE
PRINCE
KORAH
MORIN
OTTER
CASSON
VACASON
VARLEY
ALBANEL
NICHOLAS
HUGHSON
BUCKLES
SAULT STE. MARIE
GOULD
GRASETT
JOGUES
LAIRD
JOHNSON
ROSE
WELLS
MONTGOMERY
BOLGER
JOUBIN
Elliot Lake
LEFROY
THESSALON
DAY
PATTON
SCARFE
MACK
ESTEN
BRIGHT
COBDEN
STRIKER
LONG
SPRAGGE
LEWIS
Blind River
ST JOSEPH
Scale
Kilometres 20 10 0 20

Balsam Fir Sawfly

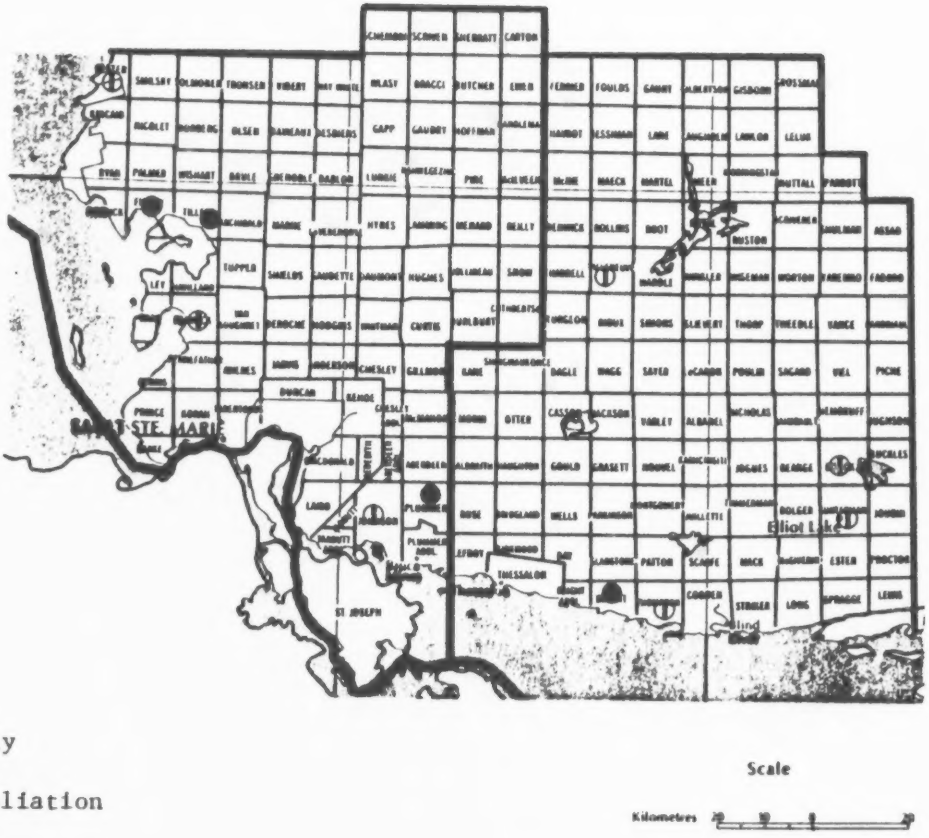
Areas within which defoliation occurred in 1959

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
THESSALON
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Balsam Fir Sawfly

Areas within which defoliation
occurred in 1960

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

Redheaded Pine Sawfly, *Neodiprion lecontei* (Fitch)

Host(s): rP, jP [Major]

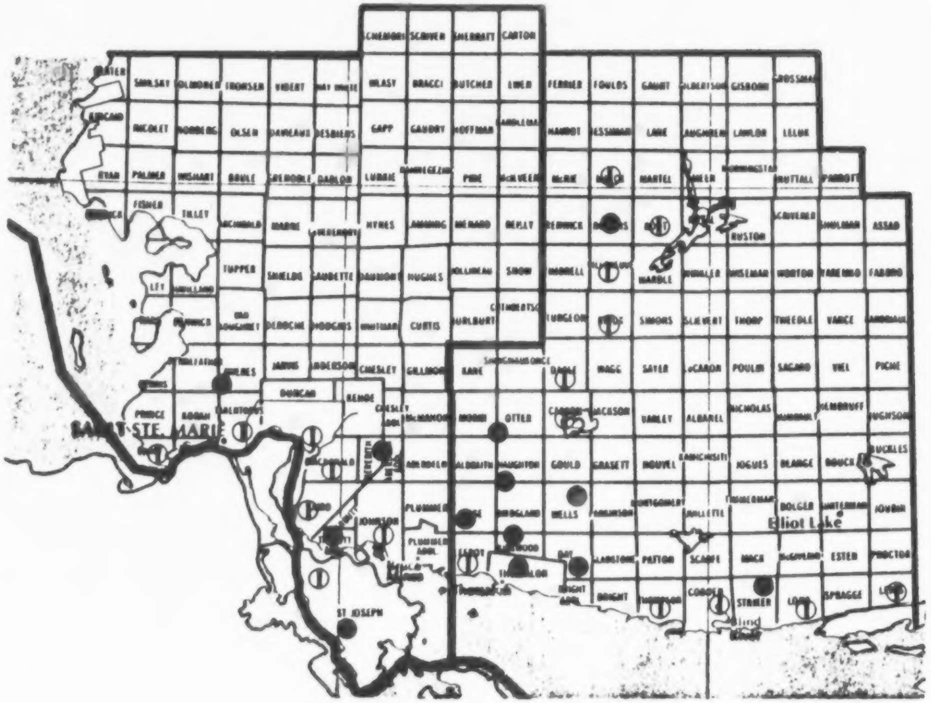
Year	Remarks
1950-1951	not reported
1952	moderate infestation in Jocelyn Twp
1953	not reported
1954	High populations occurred in Tarbutt and Aberdeen Additional twps and near Sault Ste. Marie. Pockets of light infestation were observed at numerous other locations (see map, page 81).
1955	Moderate defoliation occurred in Jocelyn Twp (see map, page 82). Light defoliation was observed at numerous other locations.
1956	heavy infestation in Jocelyn Twp
1957	There was moderate defoliation in Jocelyn Twp. Populations increased in the southern part of the district (see map, page 83).
1958	Severe defoliation occurred in the Garden River Indian Reserve. There were pockets of light infestation at several other locations (see map, page 84).
1959	pockets of moderate defoliation in Herrick, VanKoughnet, Plummer and Jocelyn twps
1960	severe defoliation of plantation red pine trees in Herrick and VanKoughnet twps, and on roadside plantings in the Garden River Indian Reserve
1961	populations very low in the district
1962	not reported
1963	single colonies on young red pine in Whitman and Aberdeen twps
1964	Populations increased between Sault Ste. Marie and Bruce Mines.

(cont'd)

Redheaded Pine Sawfly, *Neodiprion lecontei* (Fitch) (concl.)

Year	Remarks
1965	Increased defoliation occurred in the Garden River Indian Reserve and in Plummer Twp.
1966	Severe defoliation persisted in the Garden River Indian Reserve and in Plummer and Jocelyn twps.
1967	Severe defoliation occurred in VanKoughnet, Jocelyn and Plummer twps and in the Garden River Indian Reserve.
1968-1969	Severe damage occurred in the Garden River Indian Reserve.
1970	Following control spraying in the Garden River Indian Reserve, populations declined to low intensity. Several red pine plantations on the outskirts of Sault Ste. Marie were severely defoliated.
1971	Populations declined at most sample locations.
1972-1975	not reported
1976	Severe defoliation occurred in a small red pine plantation in Jocelyn Twp.
1977	One red pine plantation in Aweres Twp was severely defoliated.
1978	high numbers of colonies observed in Jocelyn Twp
1979-1980	severe defoliation of red and jack pine trees in Curtis Twp

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Redheaded Pine Sawfly

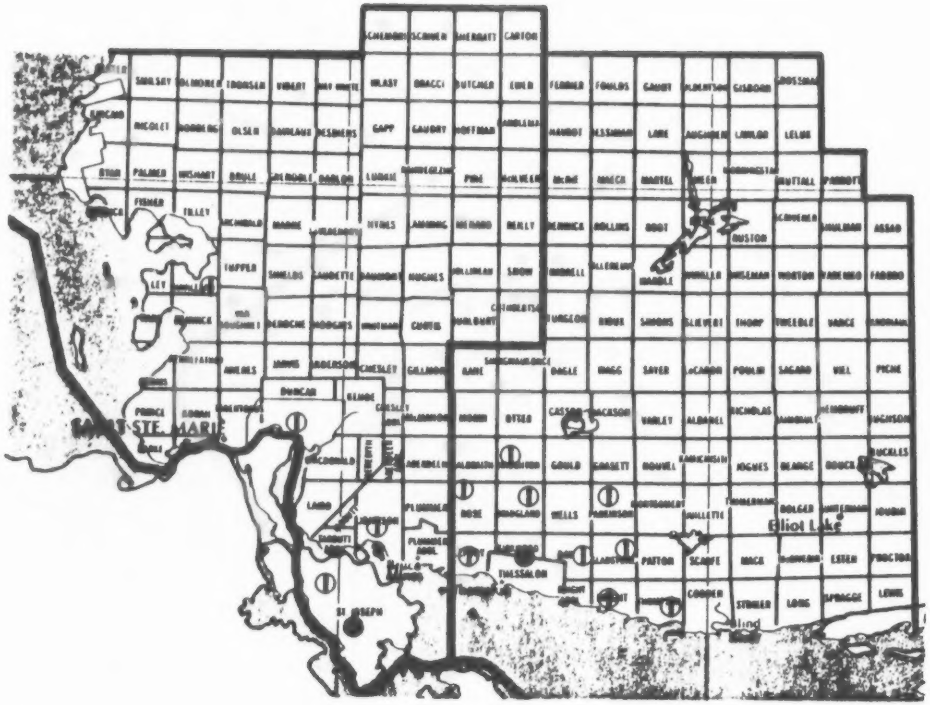
Areas within which defoliation
occurred in 1954

LEGEND

Light defoliation ◑

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST. JOSEPH
THESSALON
Elliot Lake
Blind
DUNCAN

Scale

Kilometres 20 10 0 20

Redheaded Pine Sawfly

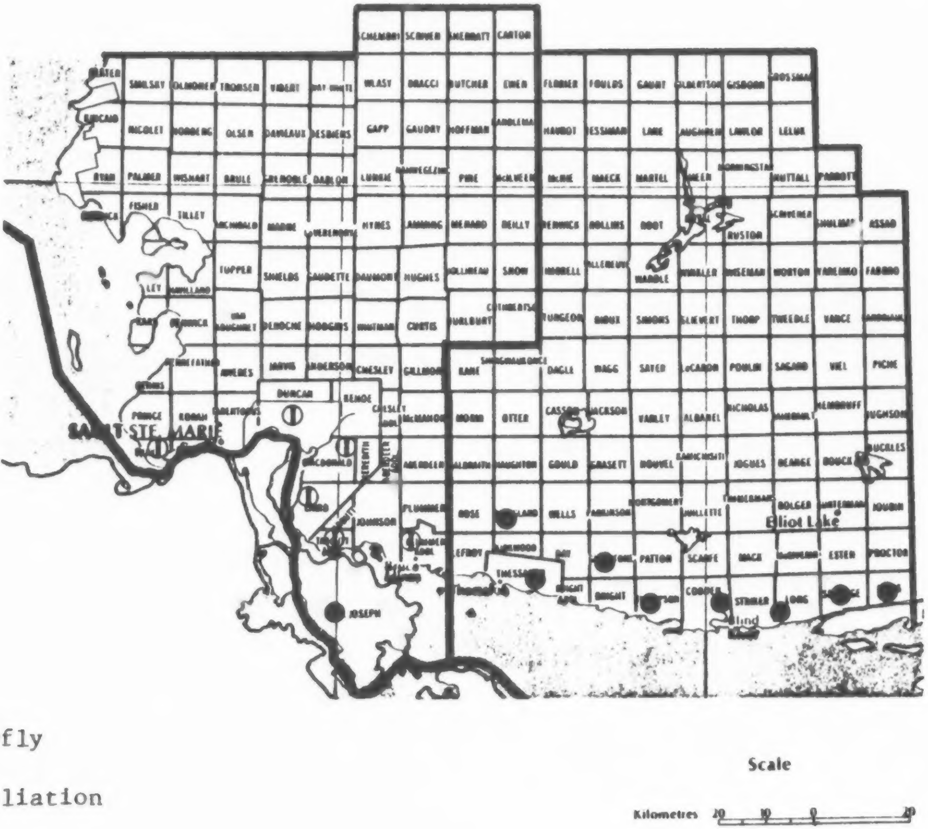
Areas within which defoliation
occurred in 1955

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
JOSEPH
Scale
Kilometres 20 10 0 20

Redheaded Pine Sawfly

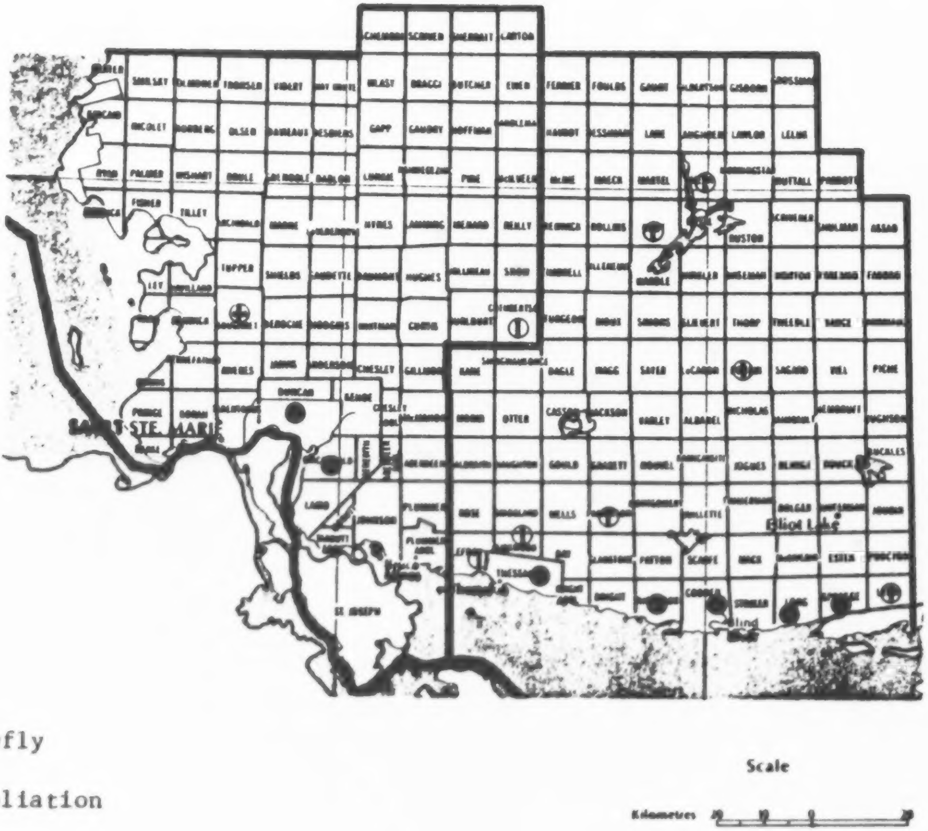
Areas within which defoliation occurred in 1957

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST. JOSEPH
Scale
Kilometres 20 10 0 20

Redheaded Pine Sawfly

Areas within which defoliation
occurred in 1958

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

Jack Pine Sawflies, *Neodiprion pratti banksianae* Roh., *N. nanulus nanulus* Schedl., *N. virginianus* complex

Host(s): jP, rP

[Major]

Year		Remarks
1950	*N. pratti banksianae:*	heavy infestation in Parke Twp
	N. virginianus:	light infestation in Parke Twp
1951	*N. pratti banksianae:*	moderate infestation in Parke Twp
	N. nanulus nanulus:	few larvae found in Parke Twp
1952	*N. pratti banksianae:*	a decline from moderate to light in Parke Twp
	N. nanulus nanulus:	Light infestation persisted in Parke Twp.
1953	*N. pratti banksianae:*	low populations in Parke Twp
1954	*N. nanulus nanulus:*	a few colonies in Parke Twp
1955-1958		not reported
1959	*N. nanulus nanulus:*	a few colonies in Parke Twp
1960		not reported
1961-1962	*N. pratti banksianae:*	numerous larvae found in Jocelyn Twp
1963	*N. nanulus nanulus:*	light infestations on shoreline trees at Pancake and Batchawana bays on Lake Superior
	N. pratti banksianae:	small pockets of light infestation in Jocelyn Twp and near Sault Ste. Marie
1964	*N. nanulus nanulus:*	continued light infestations on shoreline trees at Batchawana and Pancake bays on Lake Superior

(cont'd)

Jack Pine Sawflies, *Neodiprion pratti banksianae* Roh., *N. nanulus nanulus* Schedl., *N. virginianus* complex (concl.)

Year		Remarks
1965	*N. virginianus:*	Populations increased in Gaudette and Curtis twps.
1966	*N. virginianus:*	numerous colonies observed in Curtis Twp
1967	*N. nanulus nanulus:*	Low populations occurred in Parke Twp.
1968	*N. nanulus nanulus:*	Low populations persisted in Parke Twp.
	N. pratti banksianae:	few colonies observed in Aweres and Parke twps
1959-1971	*N. pratti banksianae:*	Low populations continued in Parke Twp.
1972	*N. nanulus nanulus:*	a few colonies observed in Gaudette Twp
1973-1980		not reported

European Pine Sawfly, *Neodiprion sertifer* (Geoff.)

Host(s): pines [Major]

Year	Remarks
1950-1967	not reported
1968	first distribution record of this sawfly in the district; moderate defoliation of ornamental mugho pine at several locations in Sault Ste. Marie
1969	moderate-to-severe defoliation of ornamental pines in Sault Ste. Marie
1970-1972	continued moderate-to-severe defoliation in Sault Ste. Marie
1973	High populations persisted in Sault Ste. Marie. Colonies were also observed in the Garden River Indian Reserve.
1974-1977	Numerous colonies persisted in Sault Ste. Marie.
1978	Colonies were observed in red pine and Scots pine plantations in the northern part of Sault Ste. Marie.
1979-1980	Infestations persisted in the northern part of Sault Ste. Marie.

Bruce Spanworm, *Operophtera bruceata* (Hlst.)

Host(s): sM, aspen

Year	Remarks
1950-1964	not reported
1965	severe defoliation in Kincaid, Ryan, Palmer, Brule and Olsen twps
1966	Moderate-to-severe defoliation of sM persisted in the same general areas as in 1965.
1967-1972	not reported
1973	Light infestation occurred in Jocelyn Twp.
1974	not reported
1975	Severe defoliation occurred in VanKoughnet Twp. Light defoliation was evident in Hodgins Twp.
1976	Severe defoliation persisted in VanKoughnet Twp. Light infestations occurred in Hodgins and Palmer twps.
1977-1980	not reported

Yellowheaded Spruce Sawfly, *Pikonema alaskensis* (Roh.)

Host(s): spruce [Major]

Year	Remarks
1950	not reported
1951	severe defoliation of wS in the Garden River Indian Reserve; light defoliation at numerous other locations
1952-1953	not reported
1954	severe defoliation of small trees in La Verendrye and Haviland twps and near Sault Ste. Marie
1955	severe defoliation of a few trees in Aweres and Plummer Additional twps
1956	not reported
1957-1958	severe defoliation of a few small trees in the Garden River Indian Reserve
1959-1962	not reported
1963-1964	light defoliation of open-grown trees along the North Channel between Echo Bay and Bruce Mines
1965-1967	continued moderate defoliation of roadside trees between Portlock and Bruce Mines
1968-1980	not reported

White Pine Weevil, *Pissodes strobi* Peck

Host(s): pine, spruce [Major]

Year	Remarks
1950	Low populations occurred in Dablon, Jollineau and Gaudette twps.
1951-1956	not reported
1957	Moderate damage occurred in MacDonald Twp and in Sault Ste. Marie.
1958	Moderate damage occurred on wP in the Garden River Indian Reserve and in Sault Ste. Marie.
1959	Heavy leader damage persisted in the Garden River Indian Reserve.
1960	A decline in damage occurred in the Garden River Indian Reserve.
1961-1963	not reported
1964-1966	common throughout the district
1967	leader damage common at numerous locations; heavier damage in the Garden River Indian Reserve
1968-1971	Continued high populations occurred in the Garden River Indian Reserve.
1972-1979	leader damage common at numerous locations in the district
1980	heavier damage in Curtis Twp; common throughout the district

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Host(s): larch

[Major]

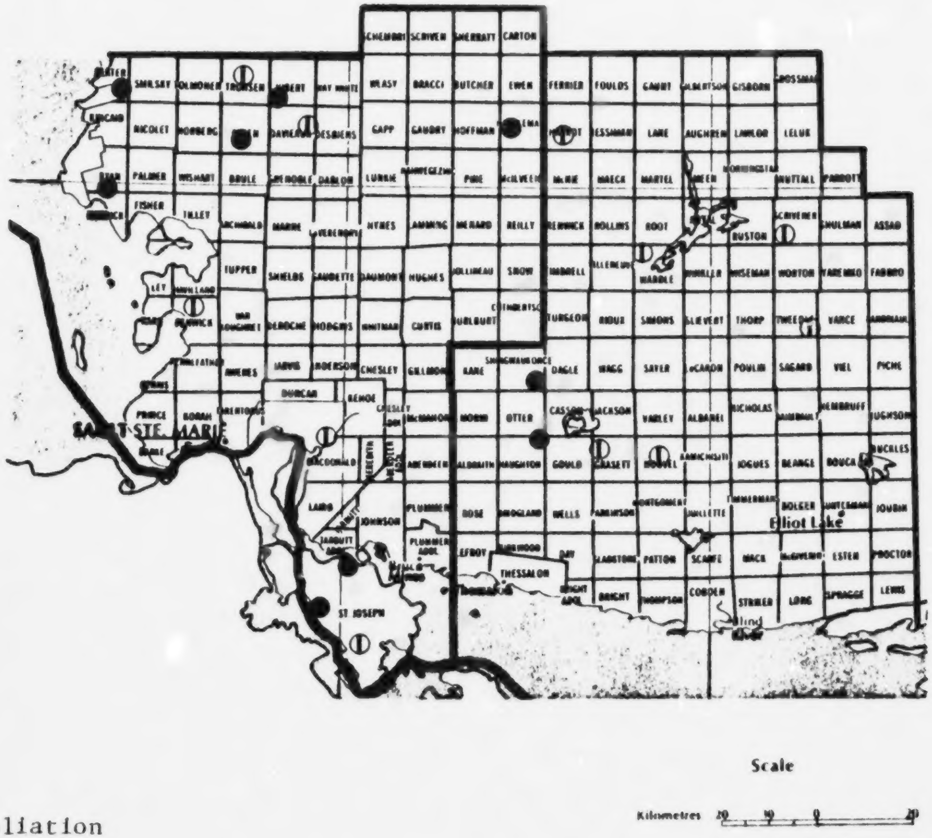
Year	Remarks
1950	not reported
1951	Light infestation occurred in the Garden River Indian Reserve, and in Plummer Additional Twp.
1952-1953	Light defoliation persisted in the Garden River Indian Reserve.
1954	A general increase in populations occurred. Severe defoliation was observed at six locations (see map, page 93).
1955	Severe defoliation recurred at five locations and light defoliation was observed in numerous other areas (see map, page 94).
1956	A general increase in infestation occurred throughout the entire district (see map, page 95).
1957	Populations remained high in the district (see map, page 96).
1958	High populations persisted in the district (see map, page 97).
1959	Populations were high at numerous locations (see map, page 98).
1960-1961	There was a decline in infestations. Some pockets of severe defoliation persisted (see maps, pages 99-100).
1962	a further decline in populations
1963	not reported
1964	light defoliation general at widespread locations
1965	An increase in populations occurred in Jocelyn and Plummer twps.
1966	Populations increased at numerous locations in the southern part of the district.

(cont'd)

Larch Sawfly, *Pristiphora erichsonii* (Htg.) (concl.)

Year	Remarks
1967	Moderate-to-severe defoliation occurred in Pennefather, Curtis and Fenwick twps.
1968	Moderate defoliation occurred in Parke and Ryan twps. Light defoliation was observed in numerous other areas.
1969	little change in infestations in the district
1970	decline in populations at all locations
1971-1975	not reported
1976	population increases on St. Joseph Island and in the Garden River Indian Reserve
1977	moderate-to-severe defoliation in Jocelyn Twp and the Garden River Indian Reserve
1978	High populations persisted in the Garden River Indian Reserve. Populations were lower in Jocelyn Twp.
1979-1980	low populations in the Garden River Indian Reserve and in Jocelyn Twp

SAULT STE. MARIE AND BLIND RIVER DISTRICTS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SCRIVEN
SHERRATT
CARTON
SMILSKY
TRONSEN
HAY WHITE
WLASY
BRACCI
BUTCHER
EWEN
FERRIER
FOULDS
GAUNT
GILBERTSON
GISBORN
GROSSMAN
NICOLET
NORBERG
DESBIENS
GAPP
GAUDRY
HOFFMAN
LANE
AUGHREN
LAWLOR
LELUK
PALMER
WISHART
BRULE
DARLON
LUNKIE
PINE
McILVEEN
McRAE
MAECK
MARTEL
NUTTALL
PARROTT
FISHER
TILLEY
ARCHIBALD
MARNE
HYNES
LAMMING
MEGANO
REILLY
RENWICK
ROLLINS
ROOT
BUSTON
SCRIVENER
SHULMAN
ASSAD
TUPPER
SHIELDS
GAUDETTE
DAUMONT
HUGHES
JOLLINEAU
SNOW
WARDLE
WISEMAN
NORTON
FABBRO
LEY
DEROCHE
HODGINS
WHITMAN
CURTIS
HURLBURT
CUTHBERTSON
TURGEON
RIOUX
SIMONS
SLIEVERT
THORP
VANCE
JARVIS
ANDERSON
CHESLEY
GILLMOR
KANE
SHINGWAUKONCE
DAGLE
WAGG
SAYER
LeCARON
POULIN
SAGARD
VIEL
PICHE
DUNCAN
KEHOE
PRINCE
KORAH
SAULT STE. MARIE
MORIN
OTTER
CASSON
JACKSON
VARLEY
ALBANEL
NICHOLAS
HEMBRUFF
HUGHSON
MACDONALD
MEREDITH
ABERDEEN
GALBRAITH
HAUGHTON
GOULD
GASSETT
JOGUES
BEANGE
BOUCK
BUCKLES
LAIRD
JOHNSON
PLUMMER
ROSE
WELLS
PARKINSON
MONTGOMERY
JOLLETTE
TIMMERMANS
BOLGER
JOUBIN
Elliot Lake
JARDUIT
PLUMMER ADDL.
LEFROY
THESSALON
DAY
GLADSTONE
PATTON
SCARFE
MACK
ESTEN
PROCTOR
ST JOSEPH
BRIGHT ADDL.
BRIGHT
THOMPSON
CORDEN
STRIKER
LONG
SPRAGGE
LEWIS
Blind River
Scale
Kilometres
20
10
0
20

Larch Sawfly

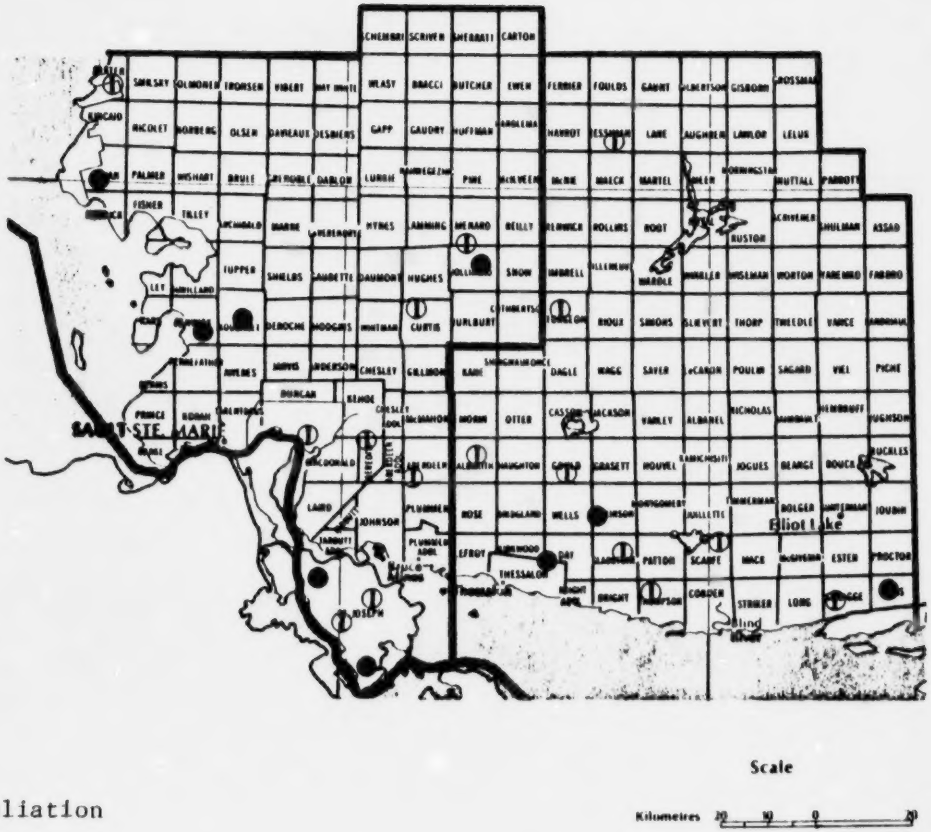
Areas within which defoliation occurred in 1954

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Larch Sawfly

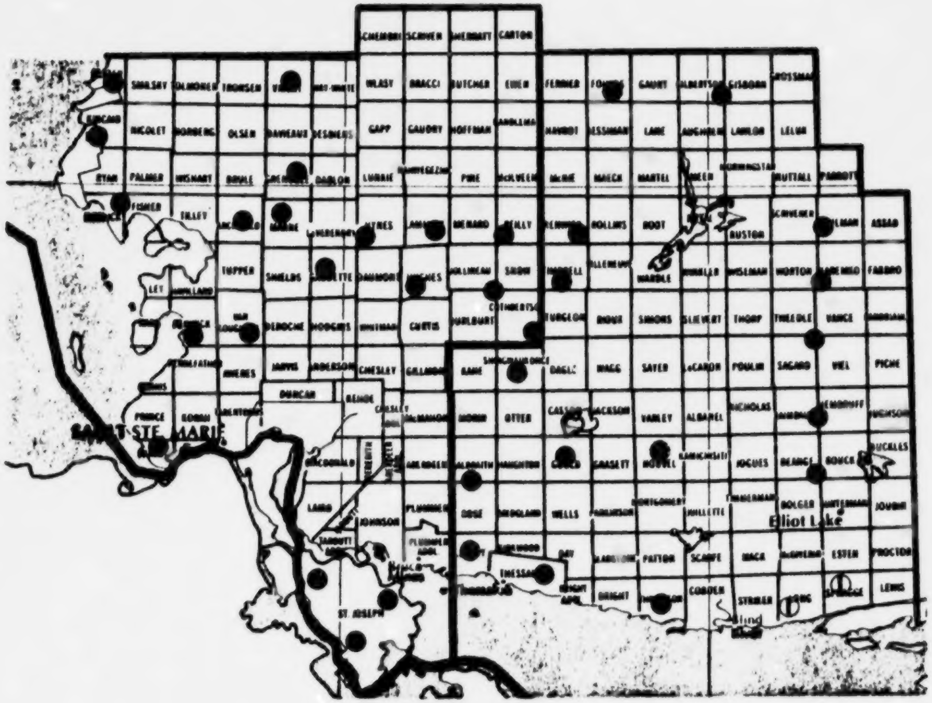
Areas within which defoliation
occurred in 1955

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST. JOSEPH
Elliot Lake
Blind River

Larch Sawfly

Areas within which defoliation
occurred in 1956

LEGEND

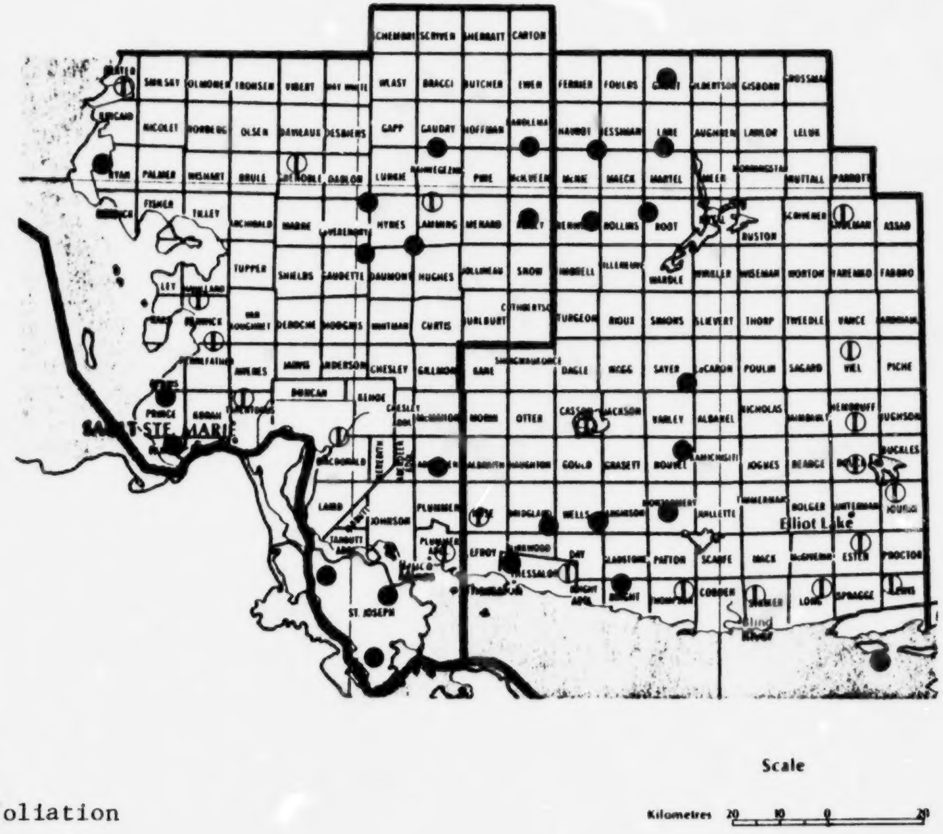
Light defoliation ⦶

Moderate-to-severe defoliation ●

Scale

Kilometres 20 10 0 40

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

Larch Sawfly

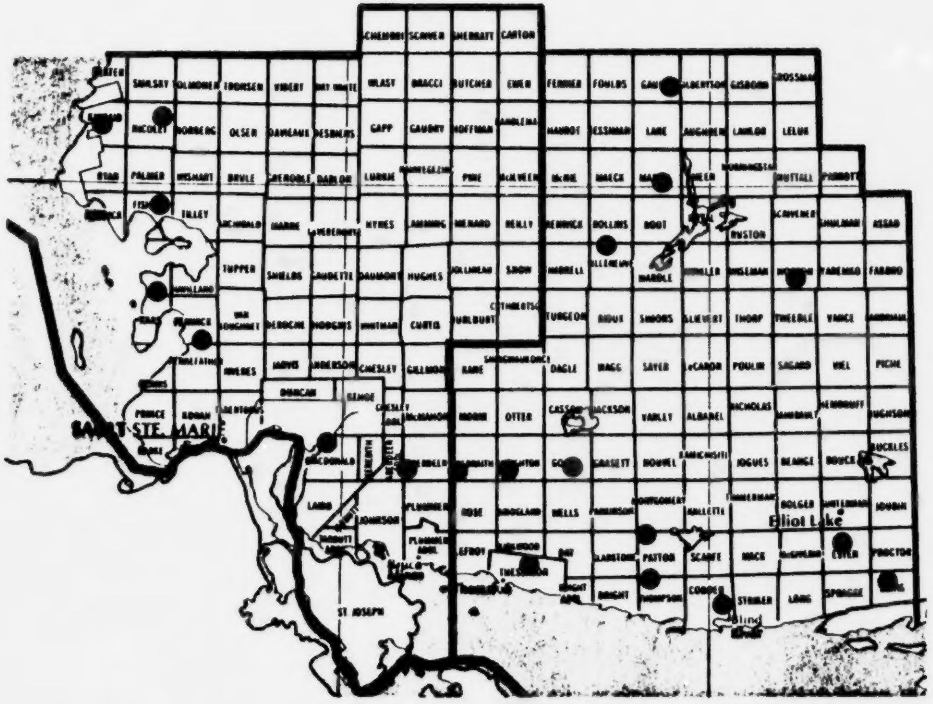
Areas within which defoliation
occurred in 1957

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
Elliot Lake
Blind River

Scale

Kilometres 20 10 0 20

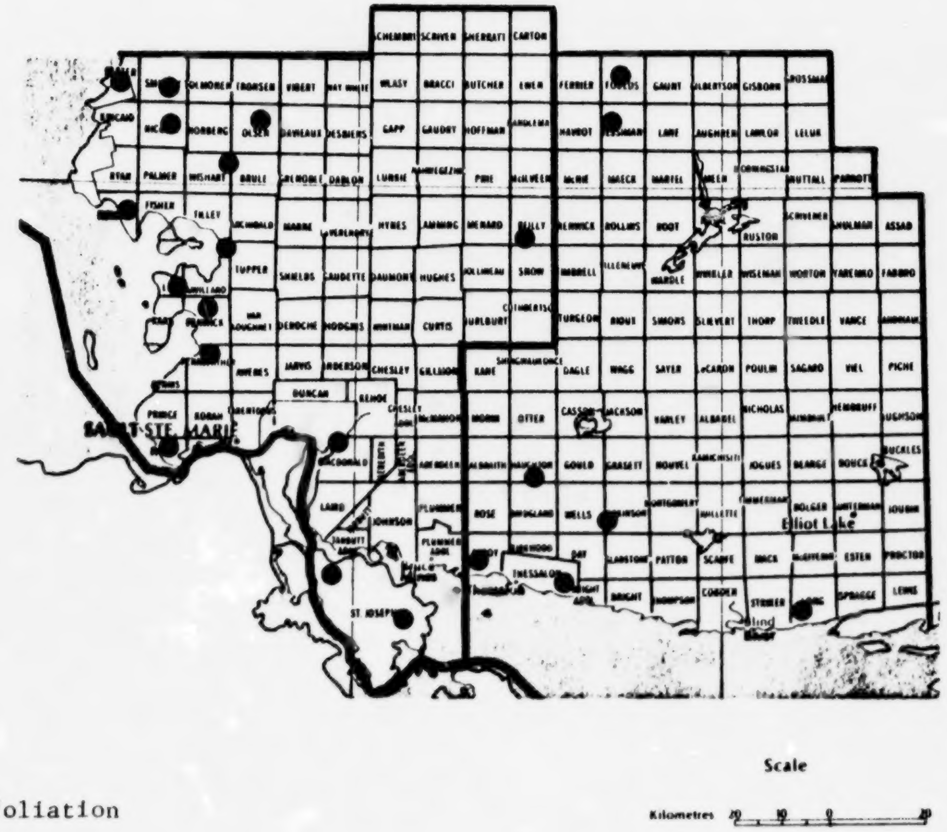
Larch Sawfly

Areas within which defoliation
occurred in 1958

LEGEND

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
Scale
Kilometres 20 10 0 20

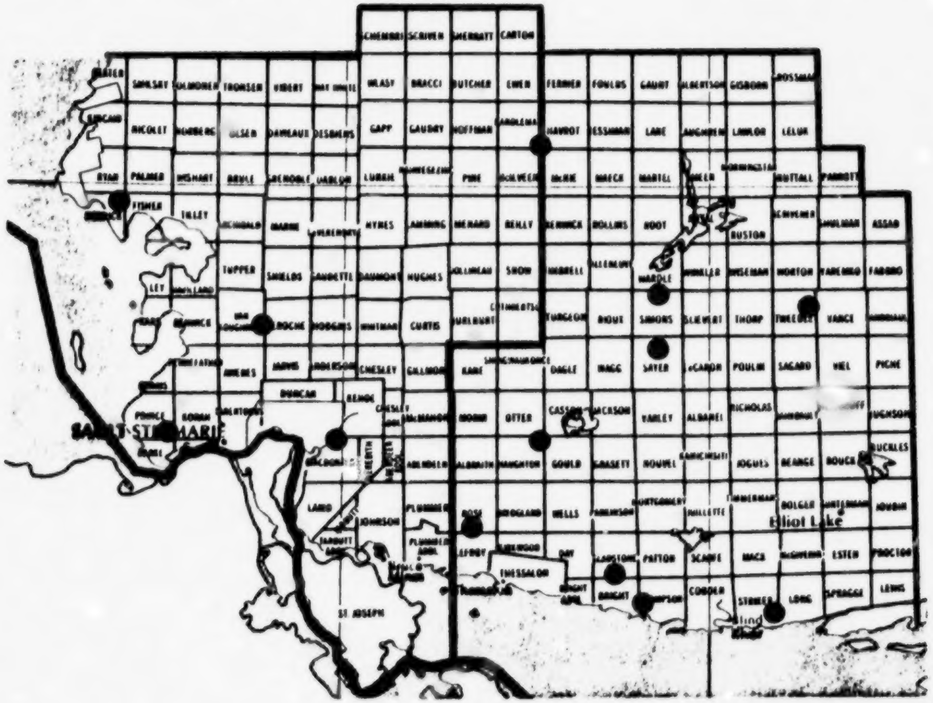
Larch Sawfly

Areas within which defoliation
occurred in 1959

LEGEND

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH

Scale

Kilometres 20 10 0 20

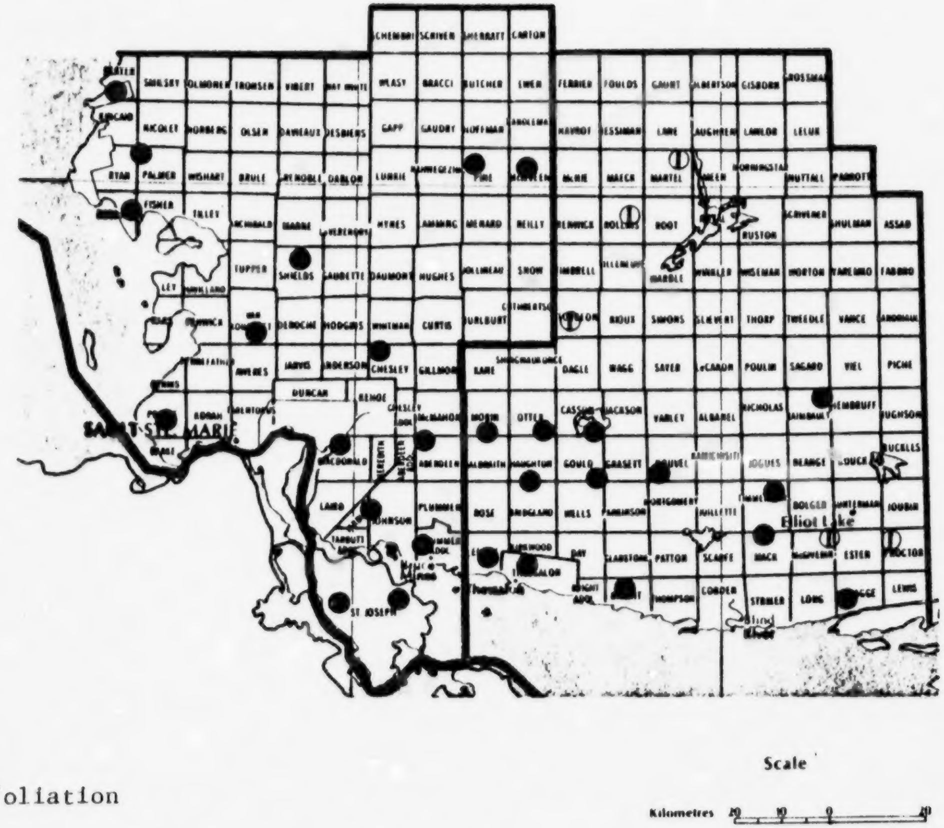
Larch Sawfly

Areas within which defoliation
occurred in 1960

LEGEND

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH
Scale
Kilometres 20 10 0 20

Larch Sawfly

Areas within which defoliation occurred in 1961

LEGEND

Light defoliation Ⓘ

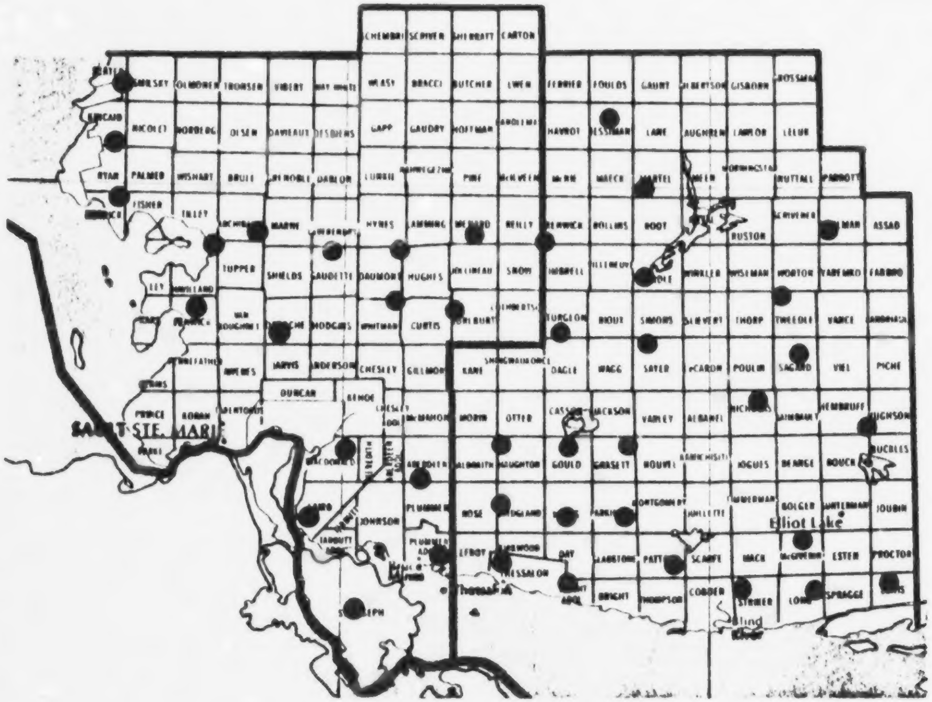
Moderate-to-severe defoliation ●

Mountain-ash Sawfly, *Pristiphora geniculata* (Htg.)

Host(s): aMo [Major]

Year	Remarks
1950-1957	not reported
1958	Moderate defoliation occurred near Haviland Bay.
1959	Moderate defoliation occurred between Gros Cap and Haviland Bay.
1960	increased populations between Sault Ste. Marie and Montreal River
1961	High populations persisted in the district.
1962	High populations persisted in the district (see map, page 102).
1963	High populations persisted in the district (see map, page 103).
1964	Moderate-to-severe defoliation occurred in the southern part of the district (see map, page 104).
1965	little change in populations in the district
1966	continued high populations general in the district
1967	Severe defoliation occurred in Curtis, Pennefather and Slater twps.
1968	severe defoliation in Parke and Prince twps
1969	severe defoliation in Curtis Twp
1970-1972	Scattered pockets of severe defoliation were general in the district.
1973-1974	not reported
1975	Populations increased on St. Joseph Island.
1976-1979	not reported
1980	numerous individual trees severely defoliated in the district

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
Scale
Kilometres 20 10 0 20

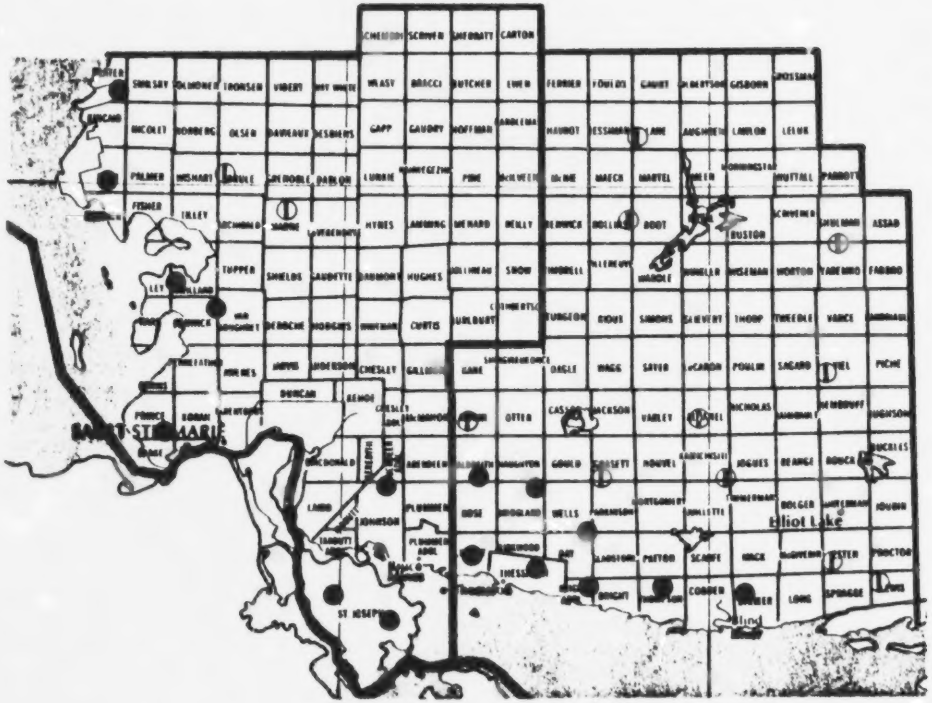
Mountain-ash Sawfly

Areas within which defoliation
occurred in 1962

LEGEND

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
ST JOSEPH

Mountain-ash Sawfly

Areas within which defoliation
occurred in 1963

LEGEND

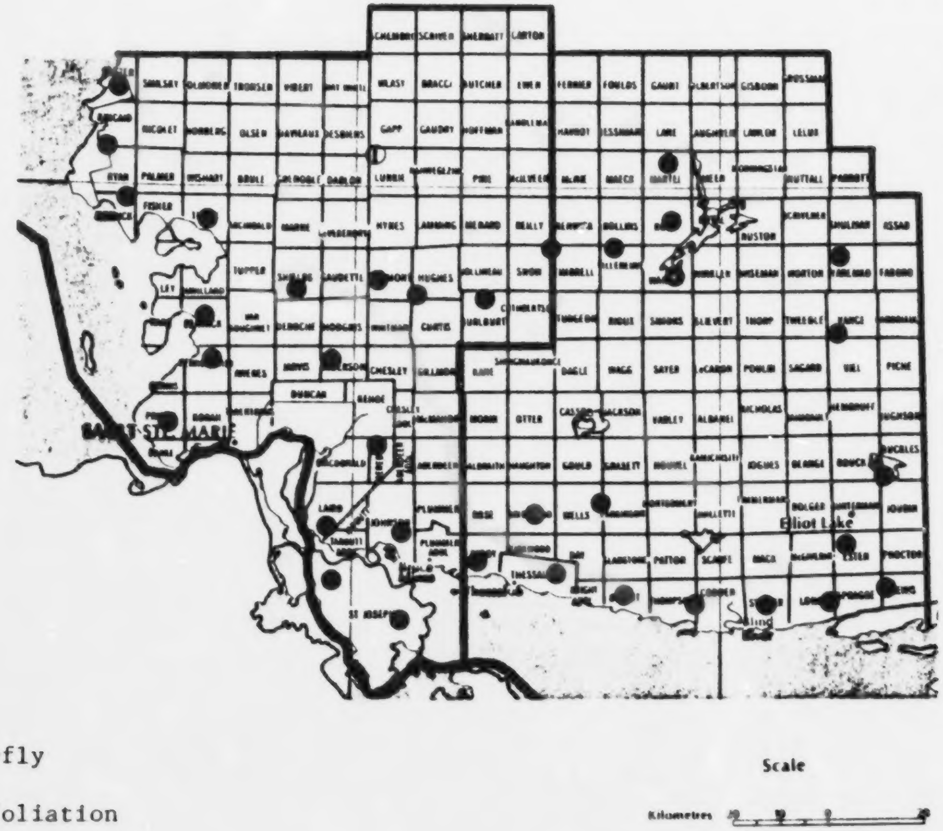
Light defoliation Ⓘ

Moderate-to-severe defoliation ●

Scale

Kilometres 20 10 0 20

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind
Scale
Kilometres

Mountain-ash Sawfly

Areas within which defoliation
occurred in 1964

LEGEND

Light defoliation ◐

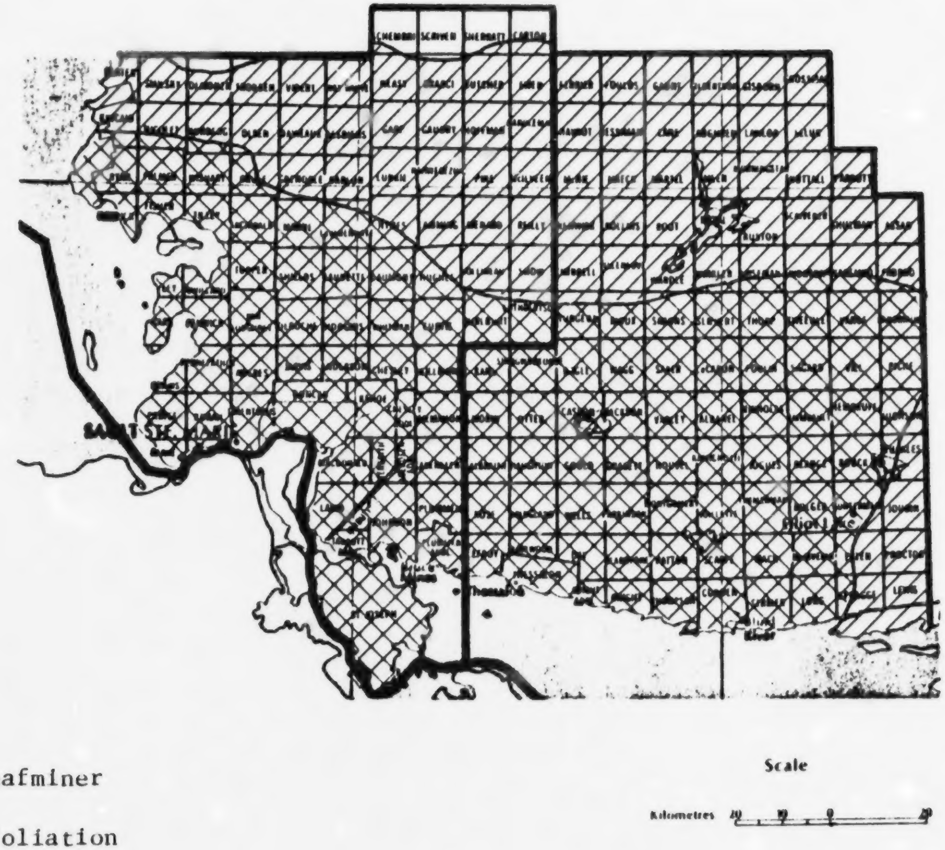
Moderate-to-severe defoliation ●

Ambermarked Birch Leafminer, *Profenusa thomsonii* (Konow)

Host(s): birch [Major]

Year	Remarks
1950	Moderate-to-severe defoliation occurred throughout most of the district (see map, page 106).
1951	moderate-to-severe defoliation in five townships (see map, page 107).
1952	moderate-to-severe defoliation in 10 townships (see map, page 108).
1953	Moderate-to-severe defoliation occurred in the northern and central parts of the district between Lake Superior and Ranger Lake.
1954	Moderate-to-severe infestation persisted from Fenwick Twp north to Slater Twp.
1955	Moderate-to-severe infestation persisted in the same area as in 1954.
1956	continued moderate-to-severe defoliation in the northern part of the district
1957	Severe browning of foliage occurred in Slater and Tupper twps.
1958	moderate-to-severe browning of foliage between Herrick and Slater twps and in Pine Twp (see map, page 109)
1959	infestations comparable with those in 1958
1960-1963	moderate-to-severe defoliation along the Lake Superior shoreline
1964	Low populations persisted in the northern part of the district.
1965	a decline to very low populations
1966	not reported
1967	light infestations in Duncan and Fenwick twps
1968	moderate infestations in Jollineau and Menard twps
1969-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Scale
Kilometres 20 10 0 20

Ambermarked Birch Leafminer

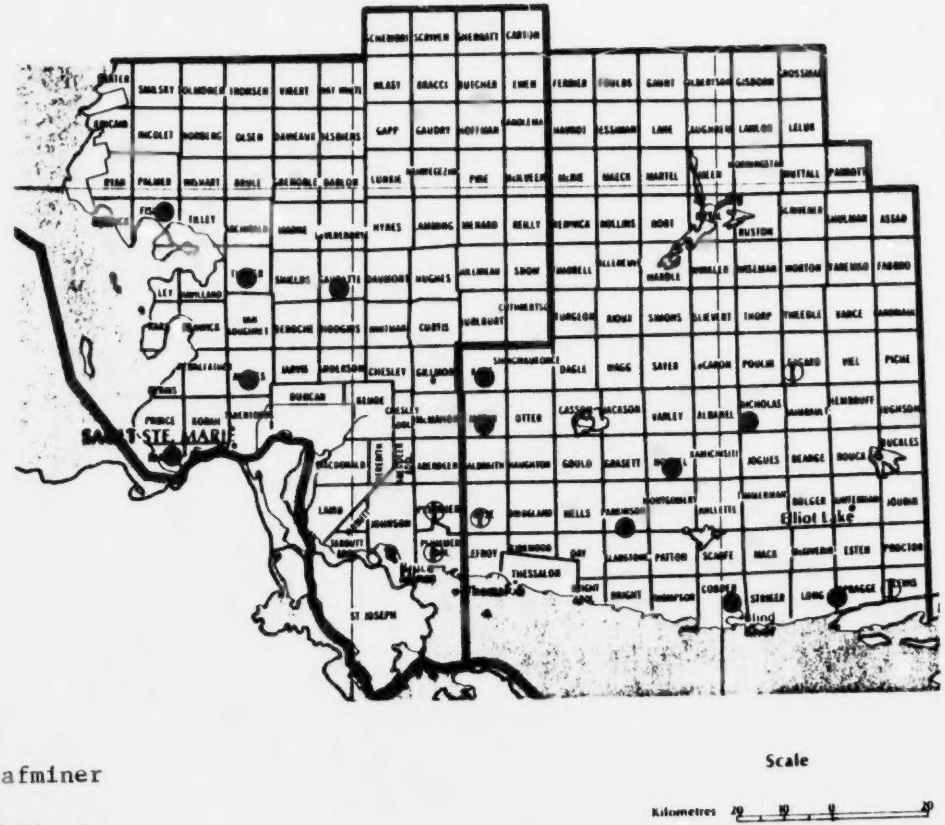
Areas within which defoliation
occurred in 1950

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
THESSALON
ST JOSEPH
Scale
Kilometres 20 10 0 20

Ambermarked Birch Leafminer

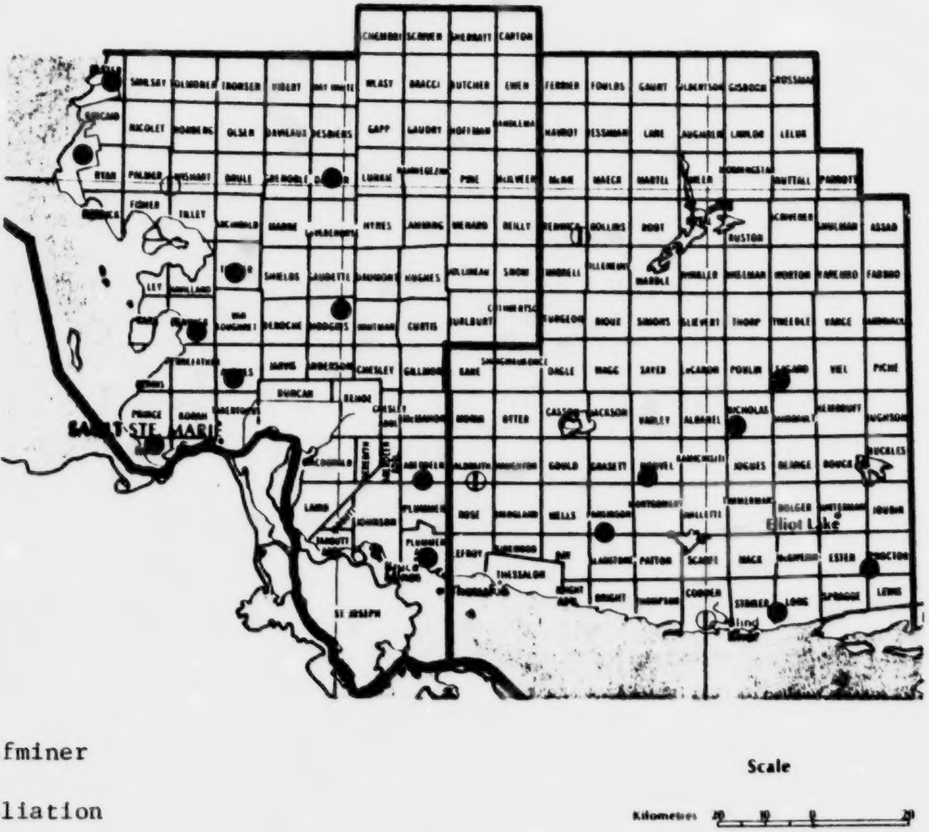
Areas within which defoliation occurred in 1951

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
Blind River
Scale
Kilometres
20
10
0
20

Ambermarked Birch Leafminer

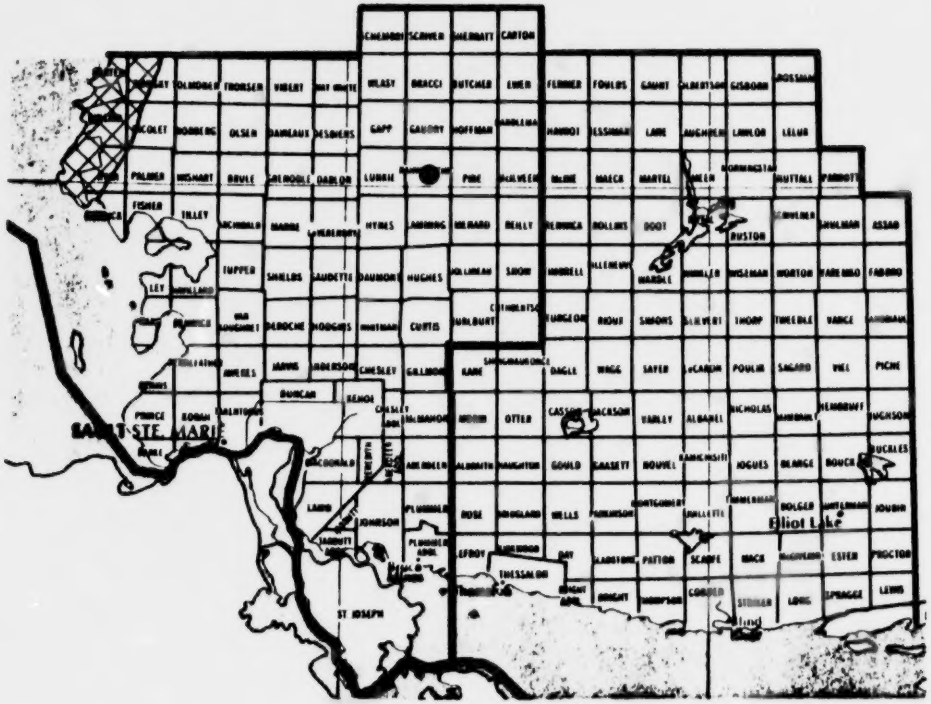
Areas within which defoliation occurred in 1952

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
ST JOSEPH
THESSALON
Elliot Lake
Blind
DUNCAN
PRINCE
KORAH
TARBUTT
JOHNSON
LAIRD
MACDONALD
CURTIS
HUGHES
TUPPER
SHIELDS
OLSEN
TILLEY
FISHER
PALMER
NICOLET
ROSE
WELLS
GOULD
OTTER
PIKE
FOULDS
GAUNT
GISBORN
LELUR
BUSTON
THORP
POULIN
PICHE
JOGUES
BOLGER
ESTEN
PROCTOR
LEWIS
LONG
SCARFE
PATTON
DAY
LEFROY
ALBANEL
NICHOLAS
JACKSON
CASSON
SAYER
WAGG
DAGLE
KANE
Scale
Kilometres 20 10 0 20

Ambermarked Birch Leafminer

Areas within which defoliation
occurred in 1958

LEGEND

Moderate-to-severe defoliation ● or ▨

Other Noteworthy Insects

Eastern Blackheaded Budworm, *Acleris variana* (Fern)

Host(s): spruce [Minor]

Year	Remarks
1950	populations at a low ebb
1951	not reported
1952	light defoliation observed in Aberdeen and Jollineau twps
1953	not reported
1954-1955	very low populations
1956-1958	not reported
1959	Light defoliation occurred between Ranger Lake and Searchmont.
1960	small numbers of larvae taken on mat samples
1961-1980	not reported

Pine Spittlebug, *Aphrophora cribrata* (Walker)

Host(s): conifers [Major]

Year	Remarks
1950-1953	not reported
1954	moderate defoliation evident in VanKoughnet Twp
1955-1966	not reported
1967	light defoliation observed in Parke Twp
1968	not reported
1969	A heavy infestation occurred in Aweres Twp.

(cont'd)

Pine Spittlebug, *Aphrophora cribrata* (Walker) (concl.)

Year	Remarks
1970-1975	not reported
1976	small numbers recorded in Parke Twp
1977-1978	not reported
1979	small numbers observed in Sault Ste. Marie
1980	not reported

Birch Sawfly, *Arge pectoralis* (Leach)

Host(s): birch [Major]

Year	Remarks
1950	low populations observed in MacDonald and Dablon twps
1951	Scattered larval colonies occurred in the Garden River Indian Reserve.
1952-1953	not reported
1954	small numbers observed in MacDonald Twp
1955-1980	not reported

Cedar Leafminer, *Argyresthia aureoargentella* Brower

Host(s): cedar [Major]

Year	Remarks
1950-1956	not reported
1957	small numbers observed at eight locations

(cont'd)

Cedar Leafminer, *Argyresthia aureoargentella* Brower (concl.)

Year	Remarks
1958	Severe defoliation occurred on St. Joseph Island and light defoliation was recorded in Ryan Twp.
1959	Populations decreased to a low ebb on St. Joseph Island.
1960-1961	Low populations were evident in Jocelyn Twp.
1962-1963	not reported
1964	small numbers observed at several points on St. Joseph Island.
1965-1980	not reported

Maple Petiole Borer, *Caulocampus acericaulis* MacG.

Host(s): maple [Minor]

Year	Remarks
1950-1977	not reported
1978	High populations occurred on St. Joseph Island; small numbers were recorded in Sault Ste. Marie.
1979-1980	not reported

Fringed Birch Sawfly, *Dimorphopteryx melanognathus* Roh.

Host(s): birch, alder [Major]

Year	Remarks
1950-1957	not reported
1958	Severe defoliation occurred in Fisher, Wishart, Palmer, Herrick and Norberg twps.
1959	low populations observed in the northern part of the district

(cont'd)

Fringed Birch Sawfly, *Dimorphopteryx melanognathus* Roh. (concl.)

Year	Remarks
1960	Populations were at a low ebb.
1961	larvae abundant in the Pancake Lake area
1962	Populations declined in the Pancake Lake area.
1963-1965	not reported
1966	moderate-to-severe defoliation recorded in 14 twps in the northern part of the district
1967	A general decline in populations was evident.
1968	not reported
1969	moderate-to-severe defoliation observed at several locations in the northern part of the district
1970-1972	not reported
1973	populations common along the Batchawana River
1974	High populations occurred along the Batchawana River.
1975-1977	not reported
1978	Moderate-to-severe defoliation occurred on a few trees in Ryan Twp.
1979-1980	not reported

Introduced Pine Sawfly, *Diprion similis* (Htg.)

[Minor]

Host(s): pine

Year	Remarks
1950-1969	not reported
1970	first record of this sawfly in the district

Aspen Twoleaf Tier, *Enargia decolor* (Wlk.)

[Major]

Host(s): aspen

Year	Remarks
1950-1969	not reported
1970	low populations widespread in the district
1971-1980	not reported

Maple Trumpet Skeletonizer, *Epinotia aceriella* (Clem.)

[Minor]

Host(s): maple

Year	Remarks
1950-1969	not reported
1970-1971	light defoliation common on St. Joseph Island
1972-1980	not reported

Birch Leafminer, *Fenusa pusilla* (Lep.)

[Major]

Host(s): birch

Year	Remarks
1950-1959	not reported
1960	low populations at scattered points
1961-1966	not reported
1967	Low populations occurred at several points.
1968	High populations occurred on ornamentals in Sault Ste. Marie.
1969	moderate-to-severe defoliation observed in Gaudette, Kars, Ley and Lewis twps

(cont'd)

Birch Leafminer, *Fenusa pusilla* (Lep.) (concl.)

Year	Remarks
1970-1971	severe defoliation evident on scattered trees in Kars Twp
1972-1973	heavy leafmining observed in Kincaid Twp
1974-1977	not reported
1978	moderate-to-severe defoliation recorded in Curtis Twp
1979	not reported
1980	moderate-to-severe defoliation observed on roadside trees at numerous points

American Aspen Beetle, *Gonioctena americana* (Schaeff.)

Host(s): aspen [Major]

Year	Remarks
1950-1956	not reported
1957	moderate-to-severe defoliation recorded in Aberdeen Twp
1958-1980	not reported

Striped Alder Sawfly, *Hemichroa crocea* (Geoff.)

Host(s): [Minor]

Year	Remarks
1950-1958	not reported
1954	Light defoliation occurred in Tilley Twp.
1955-1980	not reported

Saddled Prominent, *Heterocampa guttivitta* (Wlk.)

Host(s): sM, Be [Major]

Year	Remarks
1950-1975	not reported
1976-1977	Small areas of moderate-to-severe defoliation occurred on St. Joseph Island.
1978-1980	not reported

Pine Root Collar Weevil, *Hylobius radicis* Buch.

Host(s): pine [Major]

Year	Remarks
1950-1954	not reported
1955	first record of this insect in the district; heavy damage in Parke Twp
1956-1980	not reported

Native Elm Bark Beetle, *Hylurgopinus rufipes* (Eich.)

Host(s): elm [Major]

Year	Remarks
1950-1962	not reported
1963	brood galleries observed in dead trees on St. Joseph Island
1964-1980	not reported

Fall Webworm, *Hyphantria cunea* (Dru.)

Host(s): deciduous [Major]

Year	Remarks
1950	tents made by this insect observed at several locations
1951	Light-to-moderate defoliation occurred at numerous points.
1952	Populations declined to a low ebb.
1953-1954	not reported
1955	Populations were observed in the Montreal River and Batchawana Bay areas.
1956-1959	not reported
1960	small numbers observed at scattered locations
1961-1962	not reported
1963	low populations common at scattered points in the district
1964	not reported
1965	light defoliation noted in Curtis Twp
1966	small numbers observed at scattered locations
1967	Populations increased in Hodgins and Whitman twps.
1968-1980	not reported

Eastern Tent Caterpillar, *Malacosoma americanum* F.

Host(s): cherry [Major]

Year	Remarks
1950	tents formed by this insect common in the district
1951	not reported

(cont'd)

Eastern Tent Caterpillar, *Malacosoma americanum* F. (concl.)

Year	Remarks
1952	pockets of medium infestation evident in Meridith Twp
1953	Small numbers occurred in Aweres Twp.
1954	Populations were at a low ebb.
1955-1961	not reported
1962	Populations increased at scattered locations.
1963	not reported
1964	small numbers observed
1965	Populations increased in Plummer Twp.
1966	High populations were evident between Echo Bay and Bruce Mines.
1967	High populations occurred at numerous points.
1968	Populations declined to reach a low ebb.
1969-1975	not reported
1976	pockets of medium infestation observed on St. Joseph Island
1977-1980	not reported

Northern Tent Caterpillar, *Malacosoma californicum pluviale* Dyar.

Host(s): cherry [Major]

Year	Remarks
1950-1951	tents observed at numerous locations
1952	not reported

(cont'd)

Northern Tent Caterpillar, *Malacosoma californicum pluviale* Dyar. (concl.)

Year	Remarks
1953	small numbers in Aweres Twp
1954-1955	occasional tents observed at widely separated points
1956-1959	not reported
1960	Low populations occurred at scattered locations.
1961	not reported
1962-1963	low populations widely distributed
1964-1965	Populations increased in Gaudette Twp.
1966	A general increase in populations was evident.
1967	caterpillars numerous in Jollineau Twp
1968-1980	not reported

Arborvitae Sawfly, *Monoctenus juniperinus* MacG.

Host(s): cedar, juniper [Minor]

Year	Remarks
1950-1952	low populations at several locations
1953-1956	not reported
1957	small numbers of larvae collected in Whitman and Curtis twps
1958-1980	not reported

European Snout Beetle, *Phyllobius oblongus* (Linn.)

Host(s): deciduous [Minor]

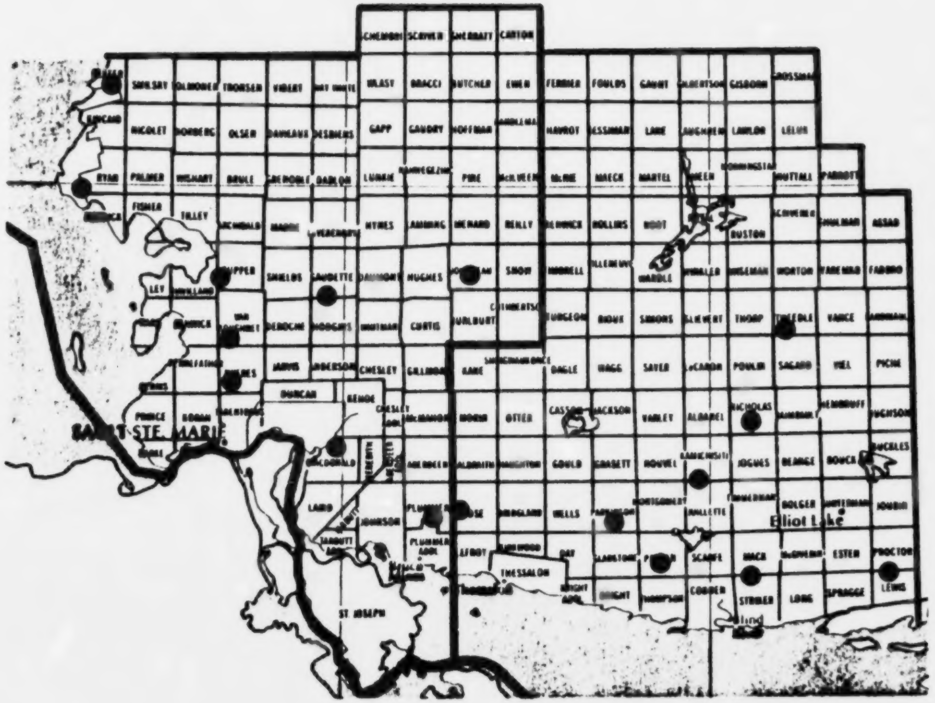
Year	Remarks
1950-1970	not reported
1971	High populations occurred in Fenwick Twp.
1972-1973	not reported
1974	moderate defoliation recorded in Hodgins Twp
1975	Populations increased to high intensity in Hodgins Twp,
1976-1980	not reported

Aspen Leafblotch Miner, *Phyllonorycter ontario* (Free.)

Host(s): aspen [Major]

Year	Remarks
1950-1951	not reported
1952	severe leafmining recorded at 11 locations (see map, page 121)
1953	moderate-to-severe leafmining evident in VanKoughnet, MacDonald and Aberdeen twps
1954-1980	not reported

SAULT STE. MARIE AND BLIND RIVER DISTRICTS


SAULT STE. MARIE
Elliot Lake
ST JOSEPH
THESSALON
Scale
Kilometres
20
10
0
20

Aspen Leafblotch Miner

Areas within which defoliation occurred in 1952

LEGEND

Moderate-to-severe defoliation ●

Northern Pine Weevil, *Pissodes approximatus* Hopk.

Host(s): pine [Major]

Year	Remarks
1950-1961	not reported
1962-1964	high populations present in decadent trees in the Searchmont area
1965-1966	High populations recurred in the Searchmont area.
1967-1980	not reported

Spruce Bud Midge, *Rhabdophaga swainei* Felt

Host(s): spruce [Minor]

Year	Remarks
1950-1962	not reported
1963-1965	low populations in Jocelyn Twp
1966-1980	not reported

European Pine Shoot Moth, *Rhyacionia buoliana* (Schiff.)

Host(s): pine [Major]

Year	Remarks
1950-1957	not reported
1958	small numbers observed in Sault Ste. Marie
1959-1961	not reported
1962-1963	A light infestation was recorded in Jocelyn Twp.
1964	Populations decreased to a low ebb in Jocelyn Twp.
1965-1980	not reported

Red Pine Needle Midge, *Thecodiplosis piniresinosae* Kearby

Host(s): rP [Minor]

Year	Remarks
1950-1977	not reported
1978	low populations observed in Plummer and Johnston twps
1979-1980	not reported

Pine Tortoise Scale, *Toumeyella parvicornis* (Ckll.)

Host(s): jP, scP [Major]

Year	Remarks
1950-1967	not reported
1968	Low populations occurred in Parke Twp.
1969-1980	not reported

Spruce Bud Moth, *Zeiraphera canadensis* Mut. & Free.

Host(s): spruce [Major]

Year	Remarks
1950-1958	not reported
1959-1961	Moderate-to-severe bud defoliation occurred in the Garden River Indian Reserve.
1962	High populations occurred along Hwy 17 from Sault Ste. Marie eastward to the district boundary.
1963-1980	not reported

Larch Needleworm, *Zeiraphera improbana* (Walker)

Host(s): tL, spruce [Minor]

Year	Remarks
1950-1974	not reported
1975	moderate-to-severe defoliation evident in the Garden River Indian Reserve and in Parke Twp
1976-1980	not reported

DISEASES

Armillaria Root Rot, *Armillaria mellea* (Vahl ex Fr.) Kumm.

Host(s): all species [Major]

Year	Remarks
1950-1962	not reported
1963-1964	small pockets of mortality in red pine plantations in the Searchmont area
1965	widespread low incidence in the district
1966-1967	not reported
1968	trace incidence on mature yellow birch in Slater Twp and on sugar maple in Jocelyn Twp
1969-1972	not reported
1973	common throughout the district on a variety of hosts
1974-1980	not reported

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau

Host(s): wE [Major]

Year	Remarks
1950-1966	not reported
1967	first district record; eighty-seven infected trees found in the city
1968	high levels of infection found in Sault Ste. Marie, St. Joseph Island and areas north
1969	new distribution records found in areas north of Sault Ste. Marie and light damage reported in Hodgins Twp
1970	The disease was detected as far north as the 47th parallel.

(cont'd)

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau (concl.)

Year	Remarks
1971-1972	Infections continued in the district, but were not observed beyond the 47th parallel.
1973	high mortality observed in the southern parts of the district
1974	High mortality continued in the southern parts of the district.
1975	Damage increased in known areas of infections.
1976-1979	Mortality increased in areas north of Desbarats and Bruce Mines and in the southern parts of the district.
1980	new area of infection observed in the Chippewa River area

Needle Rust, *Chrysomyxa ledi* d By.

Host(s): spruce [Major]

Year	Remarks
1950-1957	not reported
1958-1961	common but of light intensity throughout the district
1962-1963	not reported
1964	diseased trees common between Goulais River and Montreal River
1965-1975	not reported
1966	low infection on a few trees in Plummer Additional Twp
1978-1978	not reported
1979	light-to-moderate incidence in Gapp and Pine twps
1980	high incidence in Pine Twp

Ink Spot of Aspen, *Ciborinia whetzelii* (Seaver) Seaver

Host(s): tA [Major]

Year	Remarks
1950-1958	not reported
1959	high incidence at numerous locations
1960-1963	small pockets of severe infection at nine locations
1964-1965	not reported
1966	one small pocket of severe infection in VanKoughnet Twp
1967-1972	not reported
1973	low infections at 11 locations in the eastern part of the district
1974	not reported
1975-1977	low infections in Herrick Twp
1978-1980	not reported

Sweetfern Blister Rust, *Cronartium comptoniae* Arth.

Host(s): jP [Major]

Year	Remarks
1950-1969	not reported
1970-1972	moderate infections in Gaudette Twp
1973	not reported
1974	light infections in the Garden River Indian Reserve
1975-1977	light infections in Parke Twp and in the Garden River Indian Reserve
1978-1980	not reported

White Pine Blister Rust, *Cronartium ribicola* J.C. Fisch.

Host(s): wP [Major]

Year	Remarks
1950-1954	not reported
1955-1957	several infected trees in Laird Twp
1958-1961	common on host trees throughout the district
1962	a high incidence on immature trees in the Garden River Indian Reserve
1963	Eight percent of the trees examined in McIlveen Twp were infected.
1964-1966	not reported
1967	numerous infected trees in Sault Ste. Marie and in Aweres Twp
1968	some tree mortality in Sault Ste. Marie and in Aweres Twp
1969-1971	not reported
1972	branch and tree mortality general in the district
1973	not reported
1974	Light infections occurred in the Garden River Indian Reserve and in Gaudette and Aweres twps.
1975	not reported
1976-1980	not reported

Scleroderris Canker, *Gremmeniella abietina* (Lagerb.) Morelet

Host(s): rP, jP [Major]

Year	Remarks
1950-1959	not reported
1960	Red pine deterioration similar to the symptoms of *G. abietina* was found in Gaudette Twp.
1961-1964	Pine deterioration continued and increased in Gaudette Twp.
1965	*G. abietina* disease was cultured in samples submitted from Gaudette Twp; high incidence occurred in 2 ha of planted red pine.
1966-1968	A high incidence of this disease persisted on both red and jack pine trees in Gaudette Twp.
1969	Trace incidence persisted in Gaudette and VanKoughnet twps.
1970-1971	Increases continued in the Searchmont area.
1972	continued infections in the Searchmont area and in Sault Ste. Marie
1973-1975	little change in infection in the district
1976	a high percentage of red and jack pine infected in Gaudette Twp
1977-1978	not reported
1979	trace infections in Gaudette Twp
1980	higher infections in Gaudette Twp

Hypoxylon Canker, *Hypoxylon mammatum* (Wahl.) Miller

Host(s): tA, lA [Major]

Year	Remarks
1950-1952	not reported
1953	low incidence of infection at seven locations
1954	low incidence of infection at nine locations
1955-1966	common at low incidence in most poplar stands in the district
1967	higher incidence in the Echo Bay area
1968-1969	moderate infection in VanKoughnet and Curtis twps
1970-1972	not reported
1973	high infection in numerous areas in the district
1974-1977	not reported
1978	widespread incidence in the central part of the district
1979-1980	not reported

Shoot Blight on Red Pine, *Sirococcus strobilinus* Preuss

Host(s): rP [Major]

Year	Remarks
1950-1974	not reported
1973-1975	light infection in the Pancake Bay Provincial Park
1976-1979	light damage in Fisher Twp
1980	trace incidence in Fisher Twp

Leaf and Shoot Blight of Aspen, *Venturia macularis* (Fr.) Mull & Arx

Host(s): tA [Major]

Year	Remarks
1950-1954	not reported
1955-1966	common on roadside regeneration in the central part of the district
1967	high incidence of infection in Kars Twp
1968-1973	not reported
1974	high incidence of infection in the Pancake Bay area
1975	light damage to roadside reproduction in the central part of the district
1976-1979	generally light damage in the district
1980	higher damage in Curtis Twp

Other Noteworthy Diseases

Dwarf Mistletoe, *Arceuthobium pusillum* Pk.

Host(s): bS [Major]

Year	Remarks
1950-1966	not reported
1967	Seventy-five percent of trees examined in Fenwick Twp were infected.
1968-1970	moderate-to-severe infections in Ley and Ryan twps
1971-1972	not reported
1973	light infection observed in Slater Twp
1974-1980	not reported

Pine Needle Rust, *Coleosporium asterum* (Diet.) Syd.

Host(s): pines [Major]

Year	Remarks
1950-1958	not reported
1959-1963	pockets of low infection at scattered points in the district
1964-1980	not reported

Cherry Leaf Spot, *Cylindrosporium padi* (Lib.) Karst.

Host(s): cherry [Minor]

Year	Remarks
1950-1976	not reported
1974	first record of the disease in the district

(cont'd)

Cherry Leaf Spot, *Cylindrosporium padi* (Lib.) Karst. (concl.)

Year	Remarks
1975	pockets of low infection in the Montreal River area
1976-1978	not reported
1979	commonly observed in the Montreal River area
1980	not reported

Cytospora Canker, *Cytospora chrysosperma* (Pres.) Fr.

Host(s): poplar, willow [Major]

Year	Remarks
1950-1962	not reported
1963	Occasional tree mortality occurred on St. Joseph Island.
1964-1980	not reported

Anthracnose, *Kabatiella apocrypta* (Ell. & Ev.) Arx

Host(s): maple [Minor]

Year	Remarks
1950-1977	not reported
1978	severe foliar damage on sugar maple evident in the Echo Bay-Dunn's Valley area
1980	Severe deterioration of maple foliage occurred in the Echo Bay-Dunn's Valley area.

Larch-Willow Rust, *Melampsora paradoxa* Diet. & Holw.

Host(s): larch, willow [Minor]

Year	Remarks
1950-1977	not reported
1978	light foliage infection observed in Plummer and Jocelyn twps and in the Garden River Indian Reserve
1979-1980	not reported

ABIOTIC DAMAGE

Frost

Year	Remarks
1950-1954	Late spring frosts caused serious damage to current shoots of white spruce and balsam fir in the Echo Bay-Bruce Mines area.
1955-1962	not reported
1963	Current shoots of white spruce suffered severe damage in Whitman and Curtis twps.
1964	Severe damage to white spruce was observed at numerous locations.
1965	widespread severe damage to current foliage of many tree species in the district
1966	Light damage was observed at many points.
1967-1976	not reported
1977-1978	severe damage evident on white spruce and balsam fir in the Searchmont area
1979	Severe damage to current foliage of many tree species was evident in Jocelyn Twp.
1980	Severe damage to current foliage of many tree species was evident in the northern part of the district.

Hail

Year	Remarks
1950-1963	not reported
1964	Severe foliar and twig damage occurred to trees of many species in Jocelyn and Duncan twps.
1965-1980	not reported

Salt

Year	Remarks
1950-1975	not reported
1976	Severe foliar damate occurred on roadside trees along Hwy 17 from Sault Ste. Marie east to the district boundary.
1977-1980	not reported

Scorch

Year	Remarks
1950-1971	not reported
1972	Severe foliar damage caused by scorch was evident on sugar maples from Aweres Twp north to the Montreal River.
1973-1980	not reported

Winter Drying

Year	Remarks
1950-1958	not reported
1959	severe foliar damage evident on red pine at numerous locations
1960-1963	not reported
1964	Moderate foliar damage on red pine occurred at two locations.
1965-1980	not reported

DIEBACKS
AND
DECLINES

Birch Decline [Major]

Host(s): wB, yB

Year	Remarks
1950-1962	not reported
1963-1964	severe decline of white birch trees evident in Kars and Ley twps
1965-1966	not reported
1967	Severe decline in yellow birch stands occurred in Smilsky Twp.
1968-1970	Severe decline in yellow birch stands was evident in the Montreal River and Ranger Lake Areas.
1971-1980	not reported

Editor's Note: No scientific name for birch decline (cause unknown).

APPENDICES

APPENDIX A

DECIDUOUS HOST

Common Name	Scientific Name	Abbreviations
Alder	*Alnus* spp.	AL
Apple	*Malus* spp.	Ap
Ash, black	*Fraxinus nigra* Marsh.	As
Aspen, largetooth	*Populus grandidentata* Michx.	lA
trembling	*tremuloides* Michx.	tA
Basswood	*Tilia* spp.	Ba
Beech	*Fagus grandifolia* Ehrh.	Be
Birch, white	*Betula papyrifera* Marsh.	wB
yellow	*alleghaniensis* Britt.	yB
Butternut	*Juglans cinerea* L.	Bu
Cherry, eastern choke	*Prunus virginiana* L.	eaCh
pin	*pensylvanica* L.f.	pCh
Elm, white	*Ulmus americana* L.	wE
Horse-chestnut	*Aesculus hippocastanum* L.	hChe
Ironwood	*Ostrya* spp.	I
Maple, Manitoba	*Acer negundo* L.	mM
red	*rubrum* L.	rM
sugar	*saccharum* Marsh.	sM
Mountain-ash, American	*Sorbus americana* Marsh.	aMo
Oak, bur	*Quercus macrocarpa* Michx.	bO
red	*rubra L.*	rO
Poplar, balsam	*Populus balsamifera* L.	bPo
Carolina	*eugenei* Simon-Louis	cPo
Lombardy	*nigra* L.	lPo
silver	*alba* L.	sPo
Willow	*Salix* spp.	W

APPENDIX B

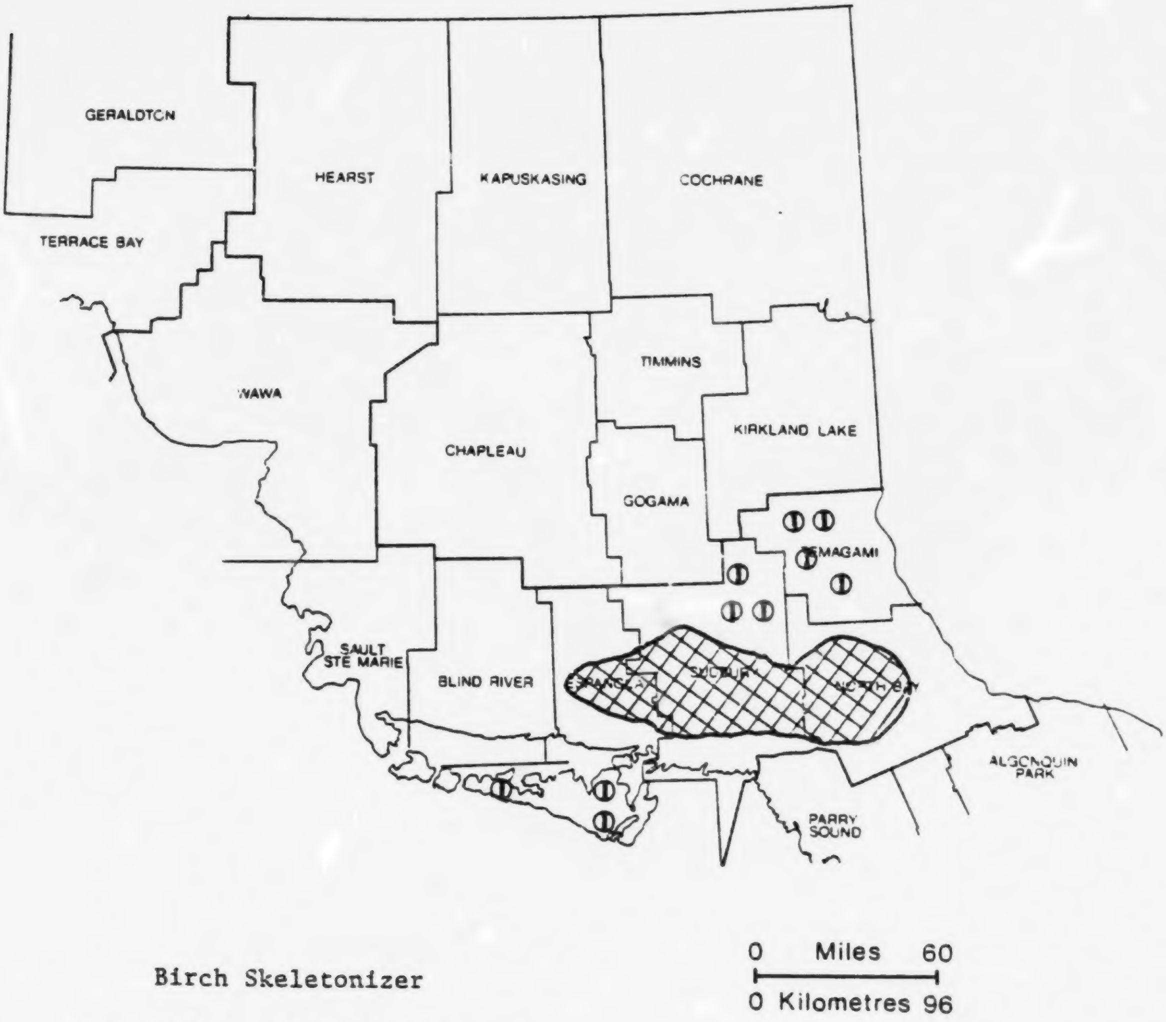
CONIFEROUS HOST

Common Name	Scientific Name	Abbreviations
Cedar, eastern white	*Thuja occidentalis* L.	eC
Fir, balsam	*Abies balsamea* (L.) Mill.	bF
Larch	*Larix laricina* (Du Roi) K. Koch	tL
Pine, Austrian	*Pinus nigra* Arn.	aP
eastern white	*strobus* L.	wP
jack	*banksiana* Lamb.	jP
mugho	*mugho* Turra	mP
red	*resinosa* Ait.	rP
Scots	*sylvestris* L.	scP
Spruce, black	*Picea mariana* (Mill.) B.S.P.	bS
Colorado	*pungens* Engelm.	colS
Norway	*abies* (L.) Karst.	nS
red	*rubens* Sarg.	rS
white	*glauca* (Moench) Voss	wS

APPENDIX C

MAPS - NORTHEASTERN ONTARIO

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Birch Skeletonizer

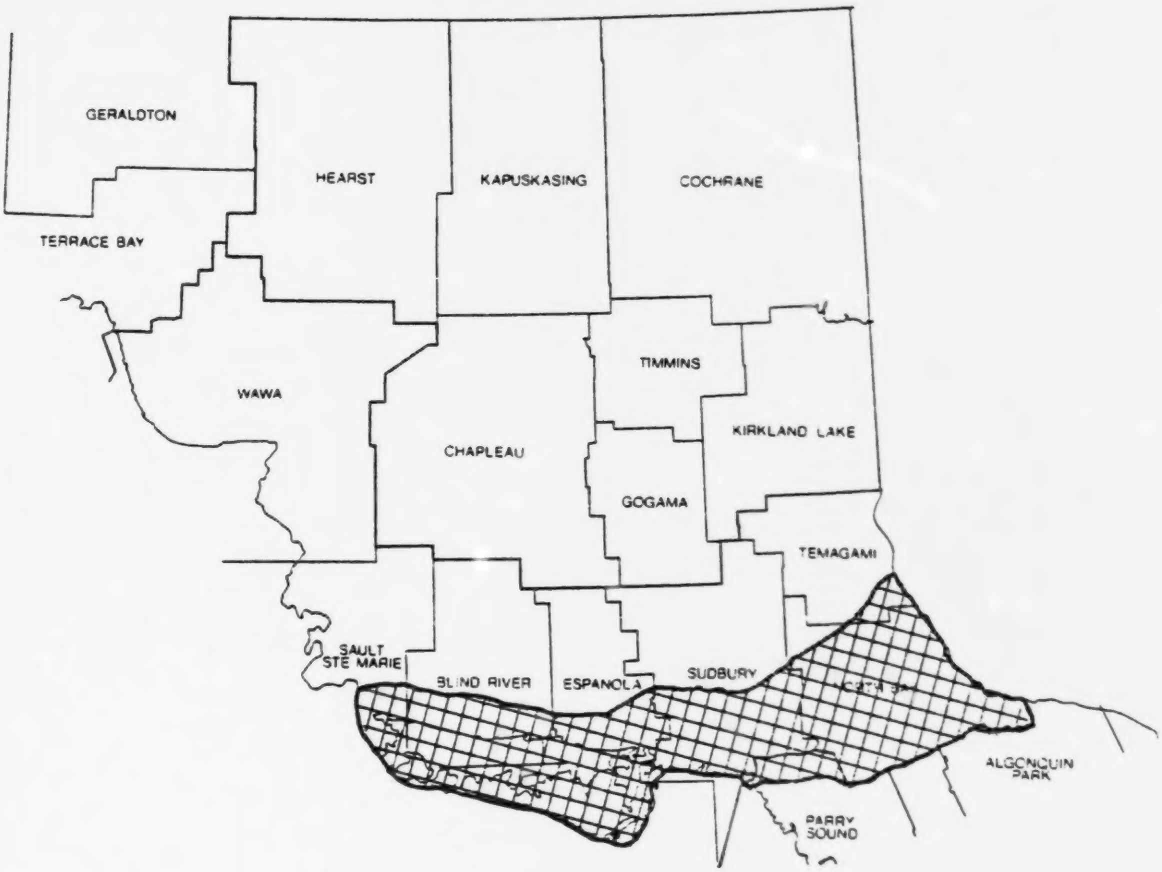
Areas within which defoliation occurred in 1950

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
ALGONQUIN PARK
PARRY SOUND

Birch Skeletonizer

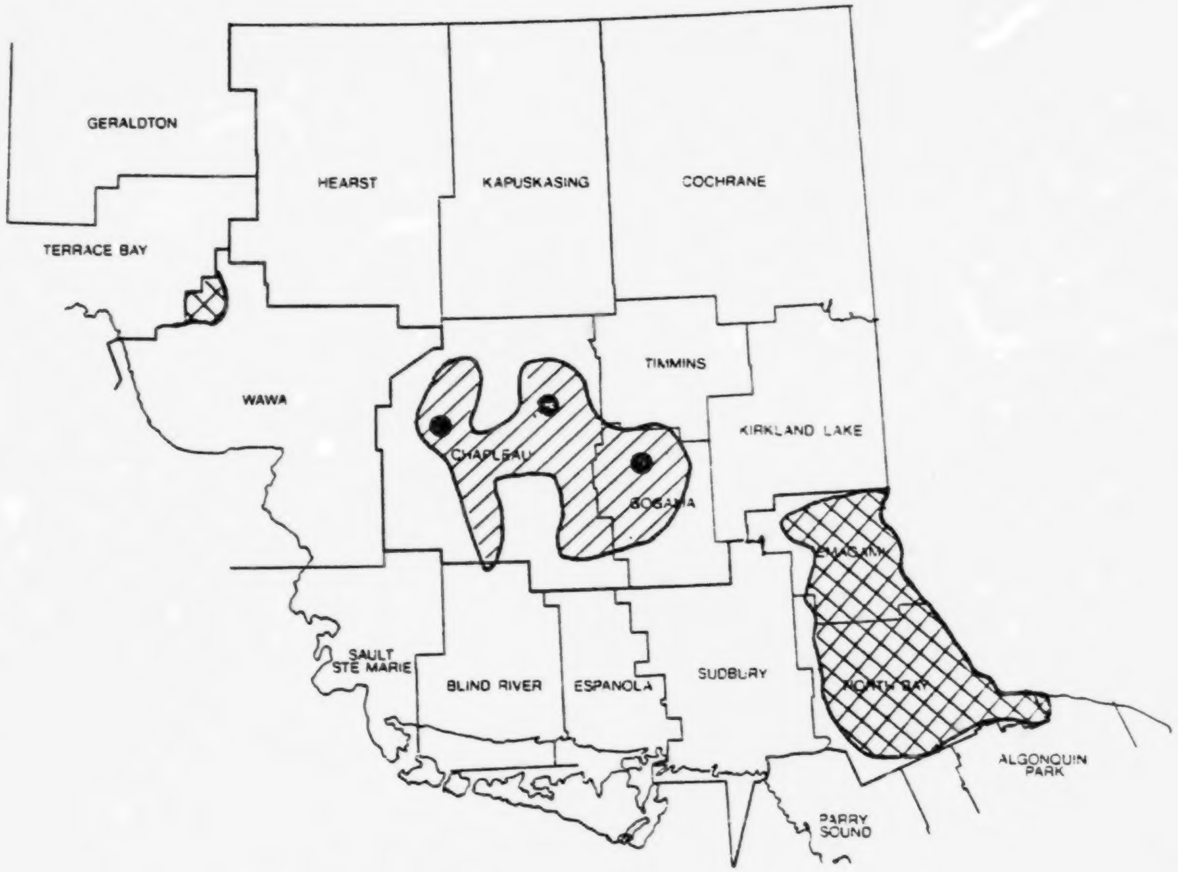
Areas within which defoliation occurred in 1961

0 Miles 60
0 Kilometres 96

LEGEND

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

Birch Skeletonizer

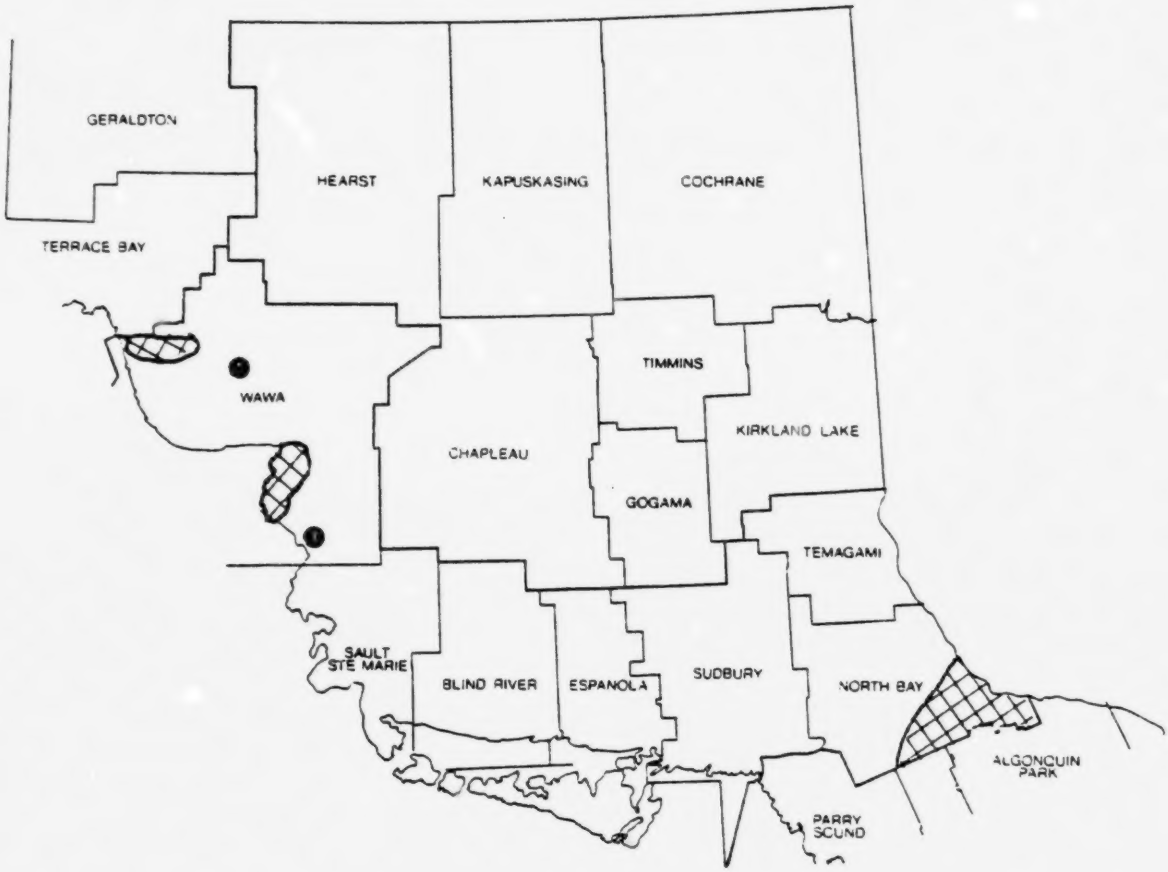
Areas within which defoliation occurred in 1963

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Birch Skeletonizer

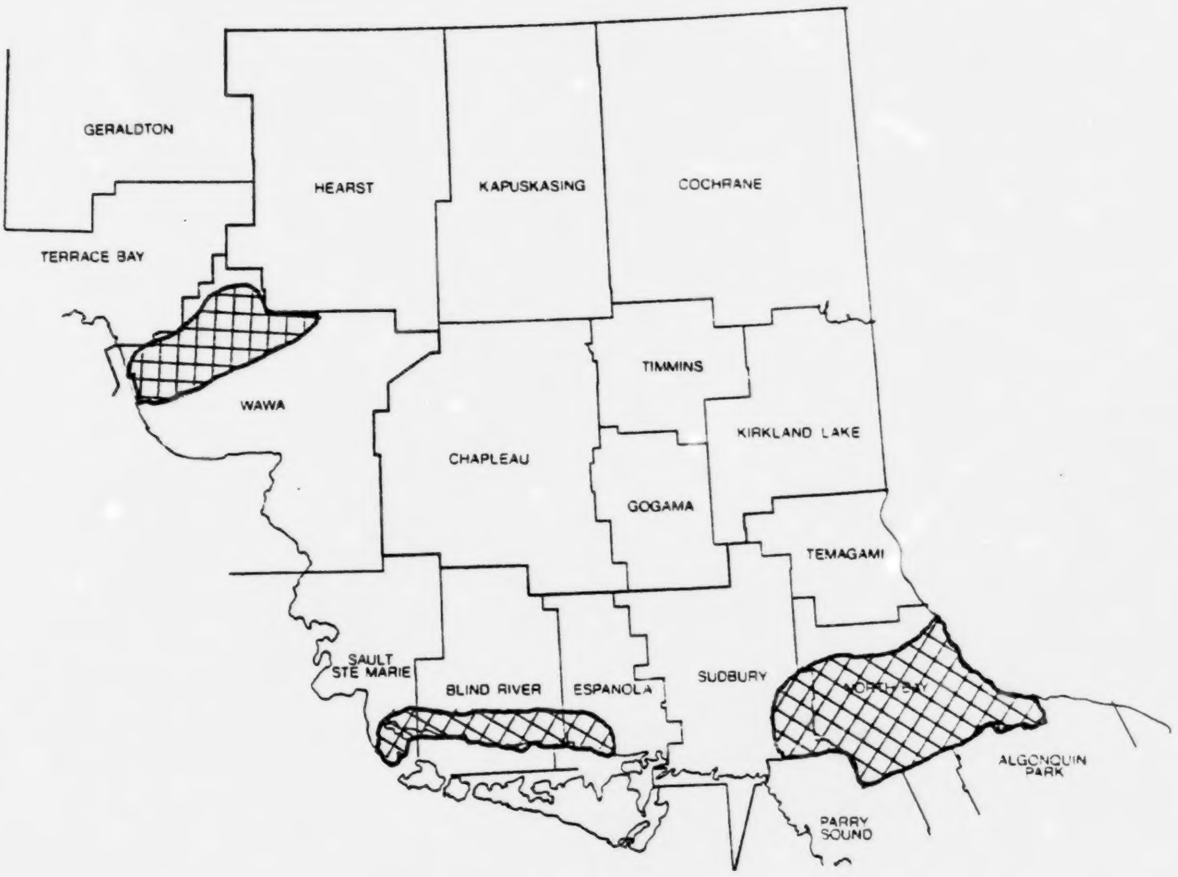
0 Miles 60
0 Kilometres 96

Areas within which defoliation occurred in 1970

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

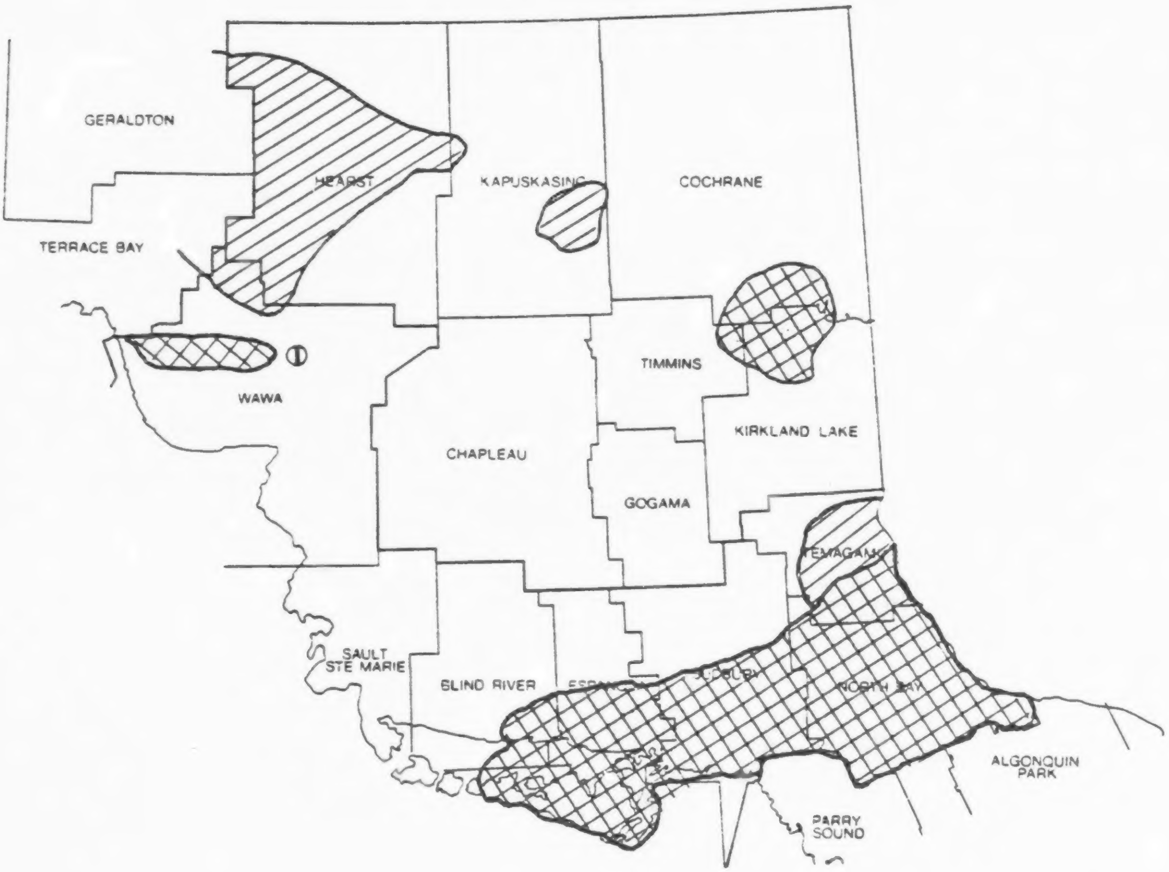
Birch Skeletonizer

Areas within which defoliation occurred in 1971

LEGEND

Moderate-to-severe defoliation ▨
]

NORTHEASTERN ONTARIO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SUDBURY
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ALGONQUIN PARK
PARRY SOUND

Birch Skeletonizer

Areas within which defoliation occurred in 1972

0 Miles 60

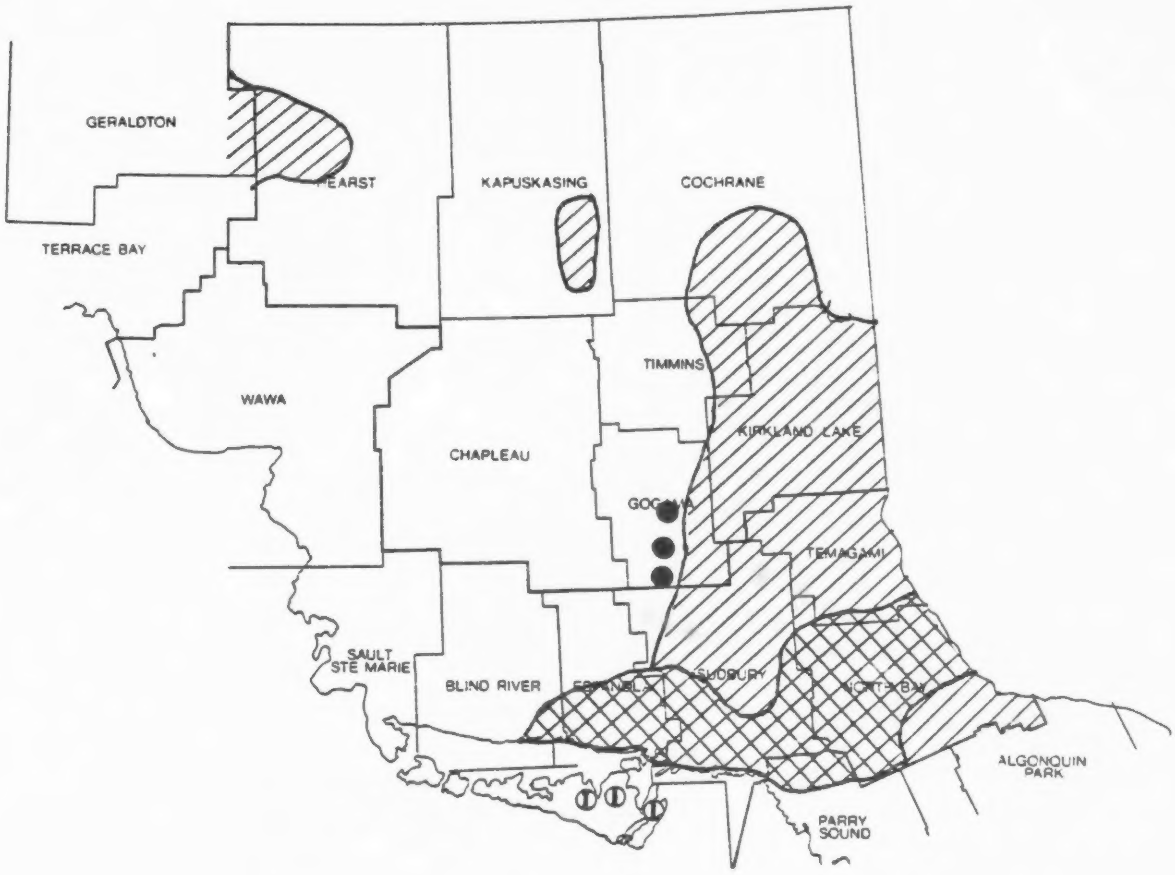
0 Kilometres 96

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ▦

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Birch Skeletonizer

Areas within which defoliation occurred in 1973

0 Miles 60

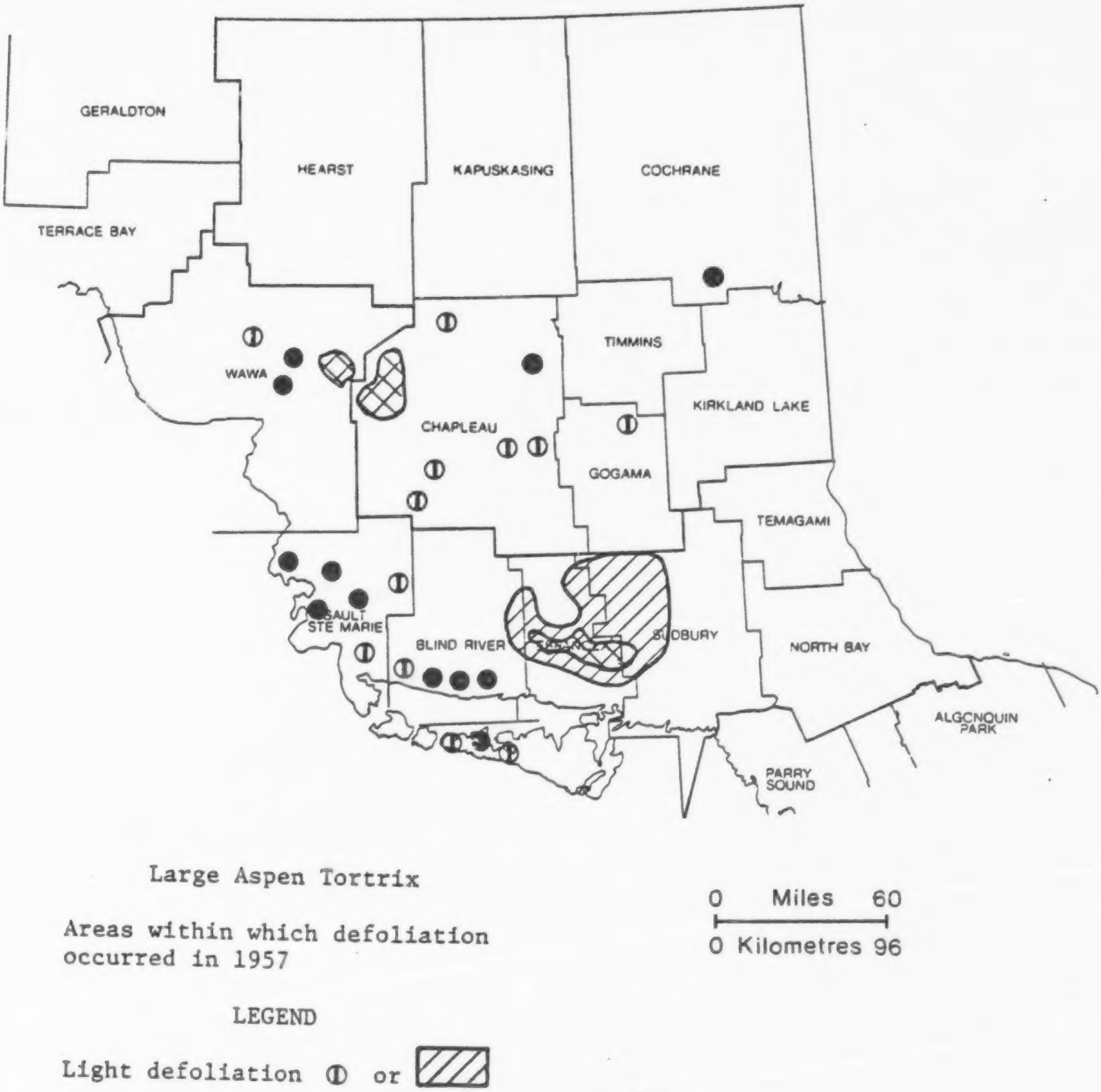
0 Kilometres 96

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ● or ▦

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

Areas within which defoliation
occurred in 1957

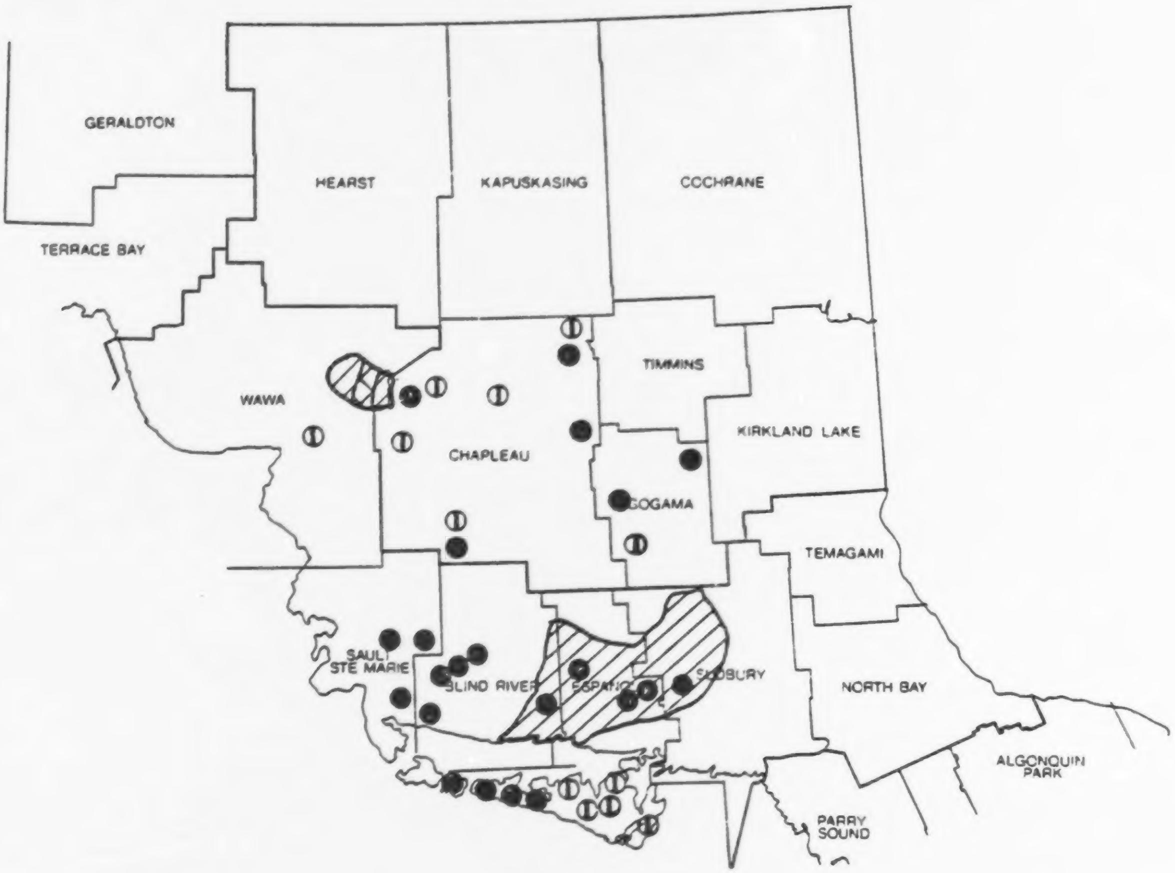
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

Areas within which defoliation occurred in 1958

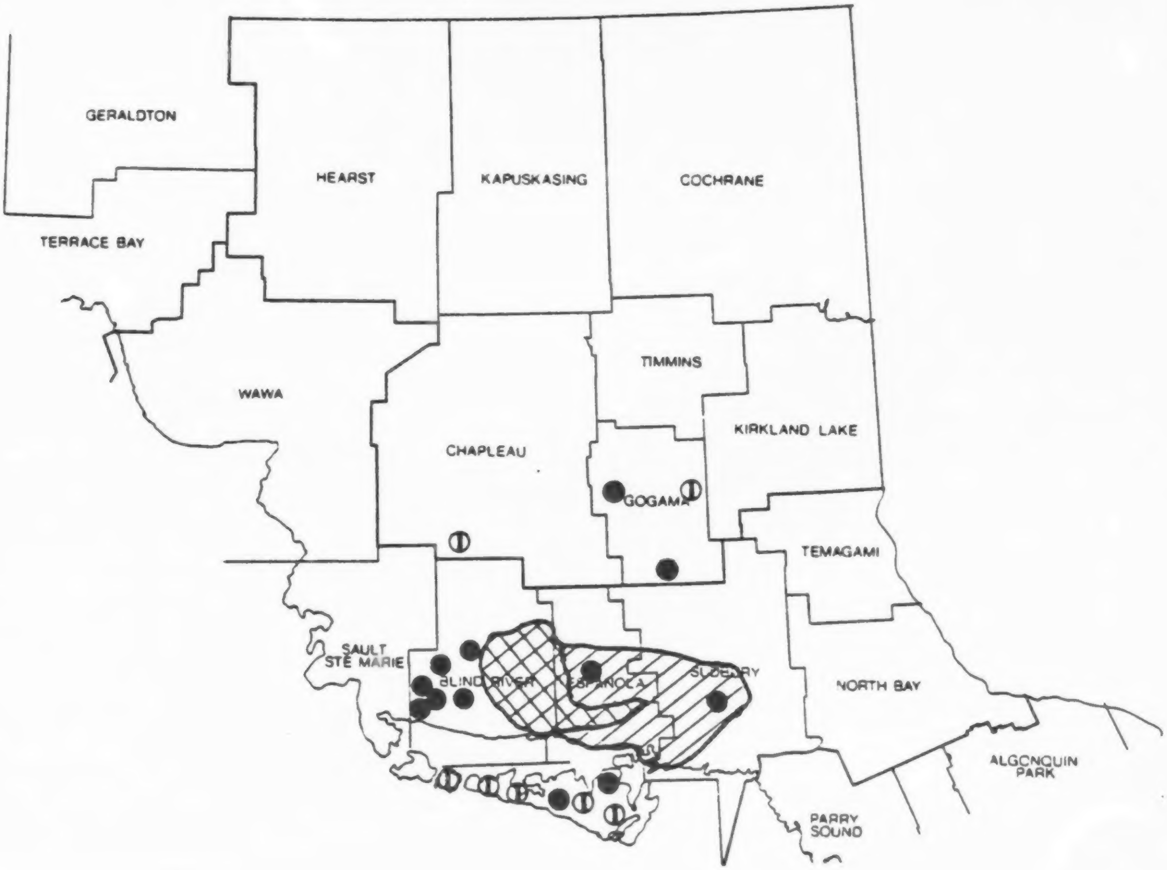
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

Areas within which defoliation occurred in 1959

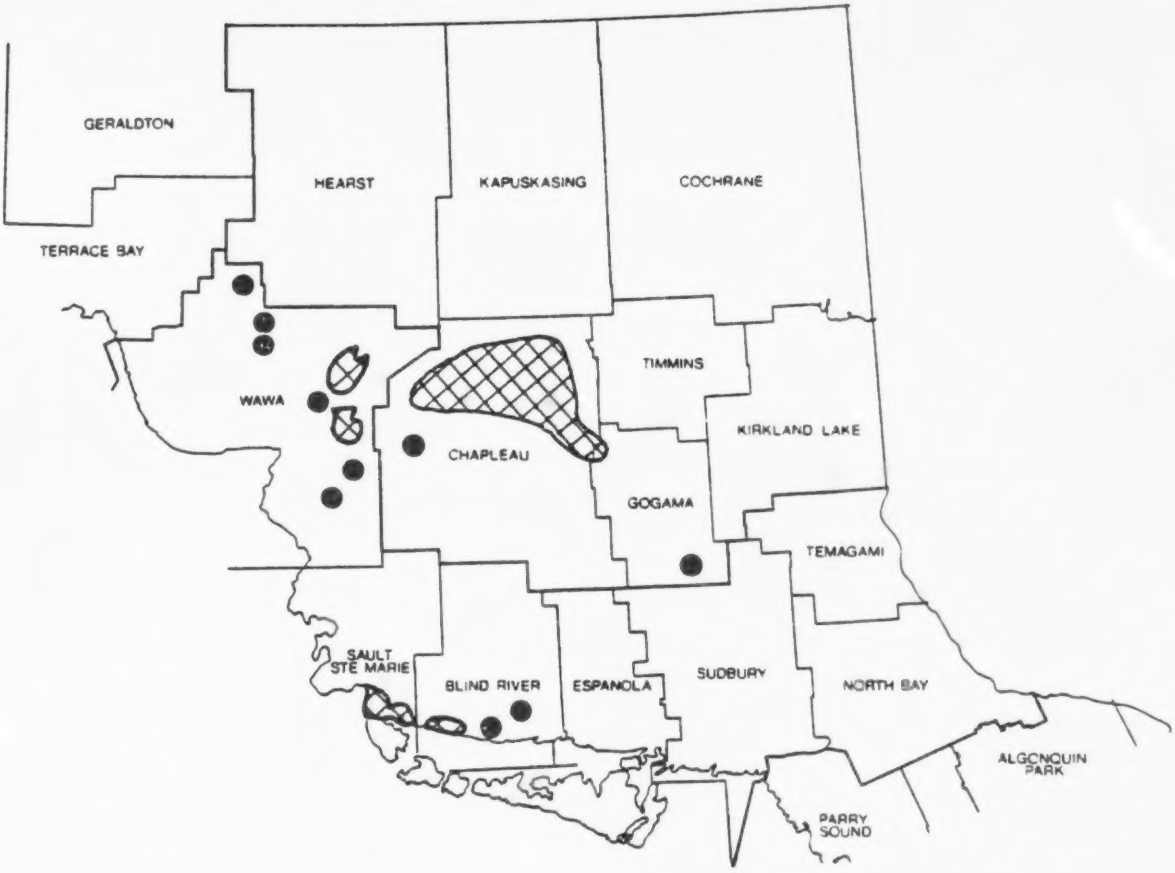
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

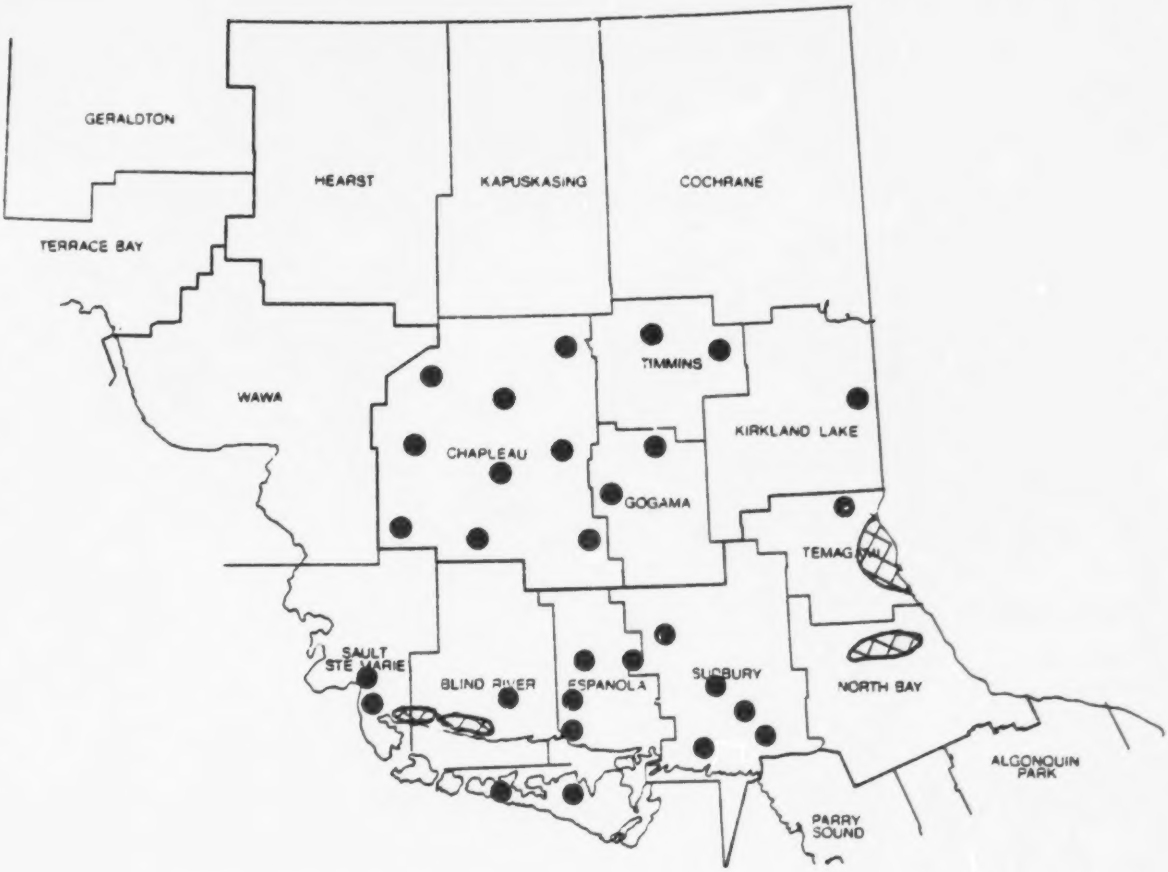
Large Aspen Tortrix

Areas within which defoliation occurred in 1970

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

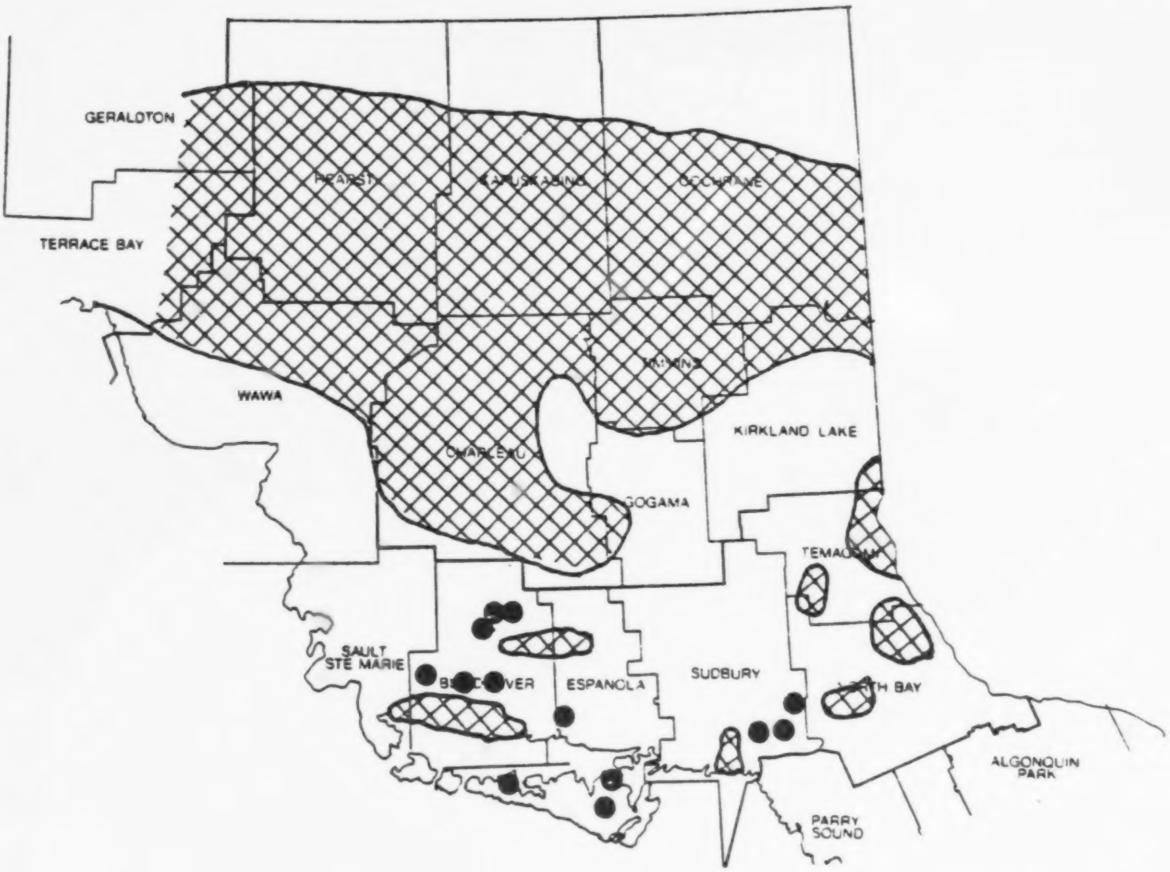
Areas within which defoliation occurred in 1971

0 Miles 60
0 Kilometres 96

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

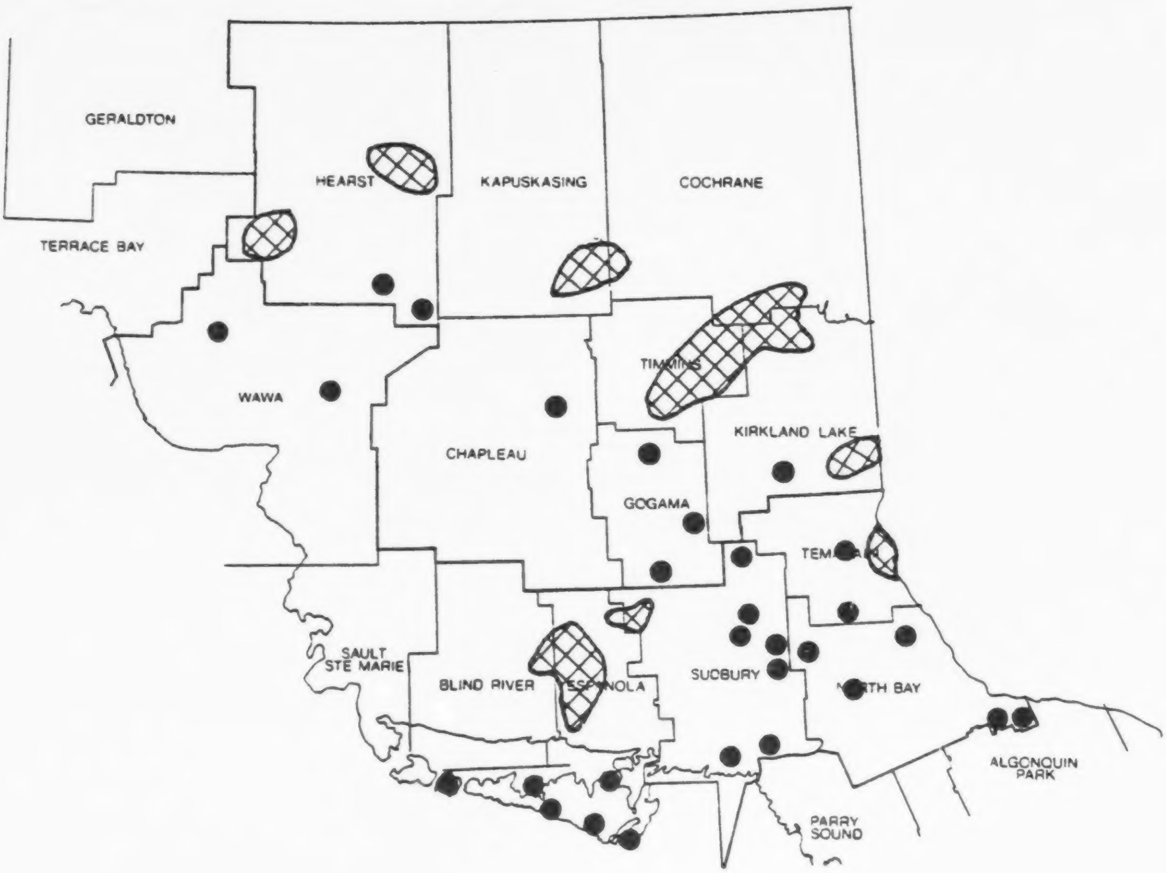
0 Miles 60
0 Kilometres 96

Areas within which defoliation occurred in 1972

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

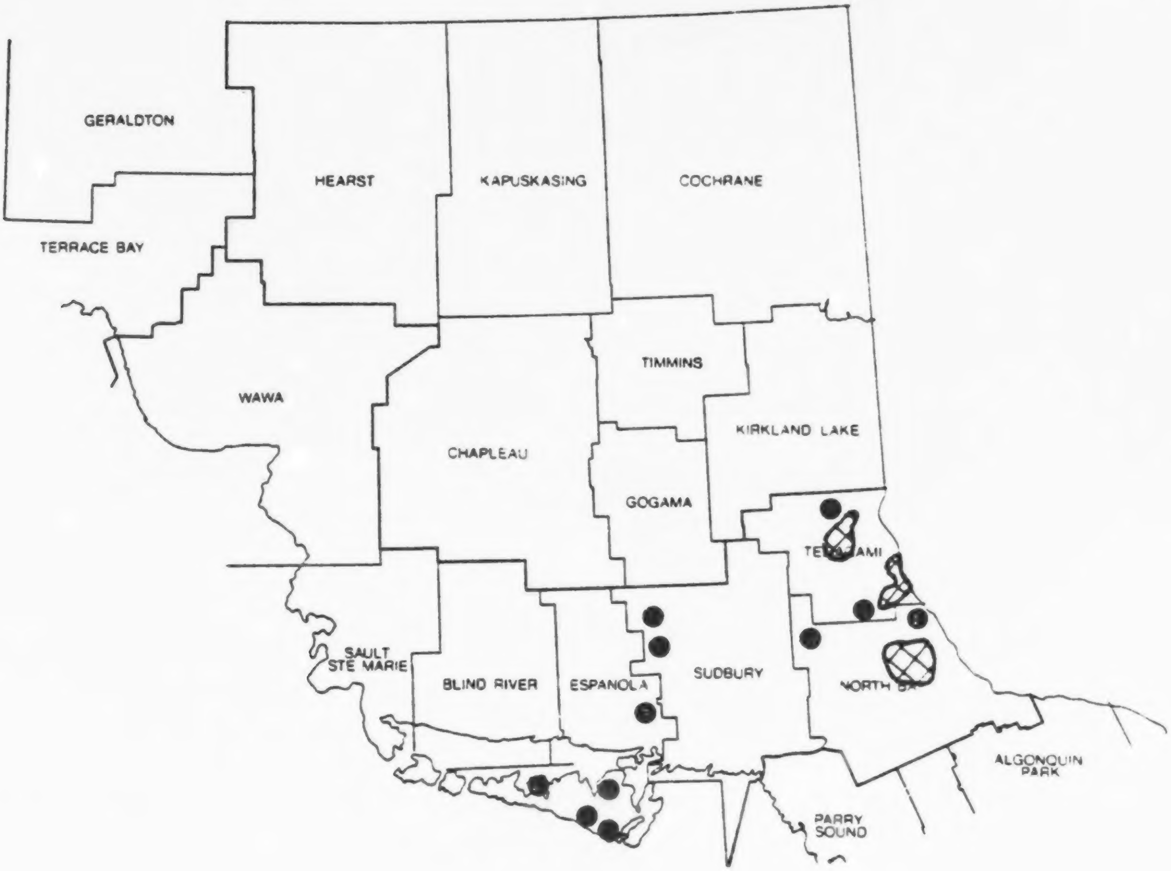
0 Miles 60
0 Kilometres 96

Areas within which defoliation
occurred in 1973

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

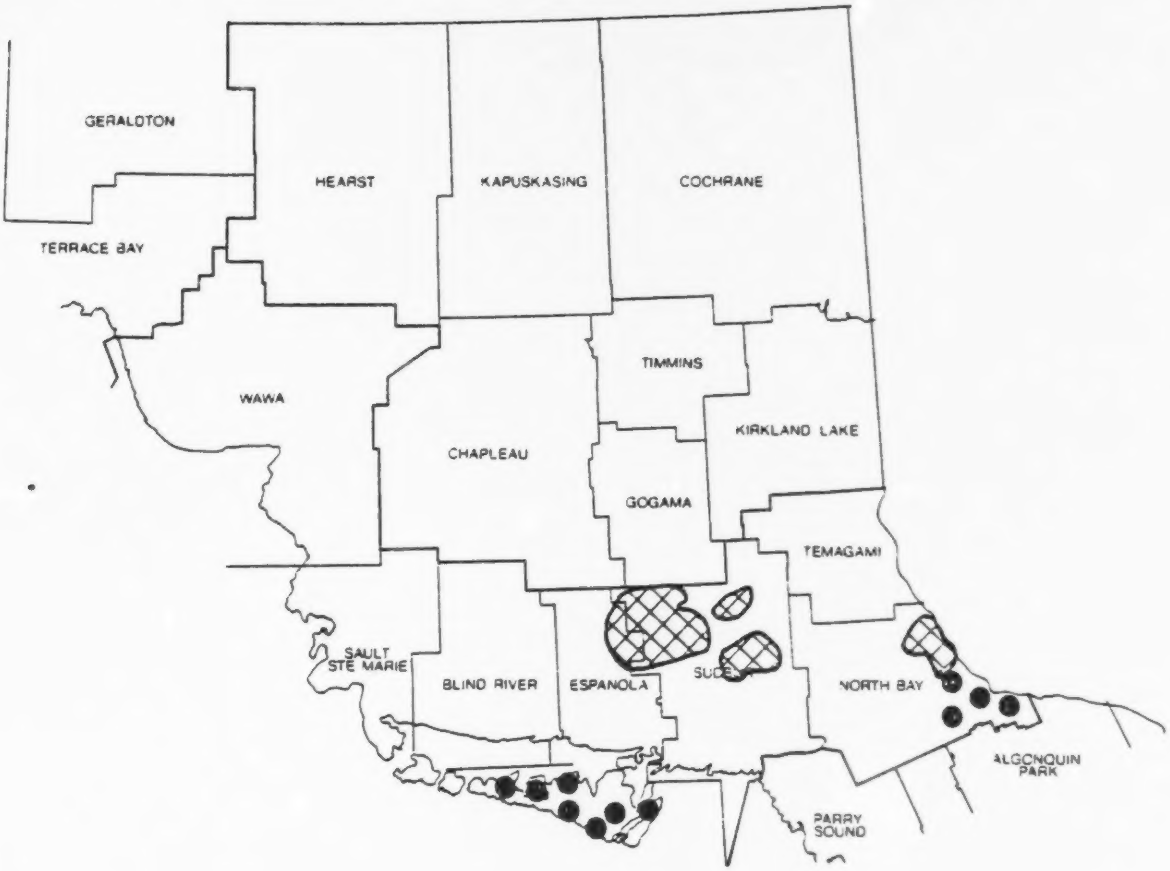
Large Aspen Tortrix

Areas within which defoliation occurred in 1974

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Large Aspen Tortrix

0 Miles 60

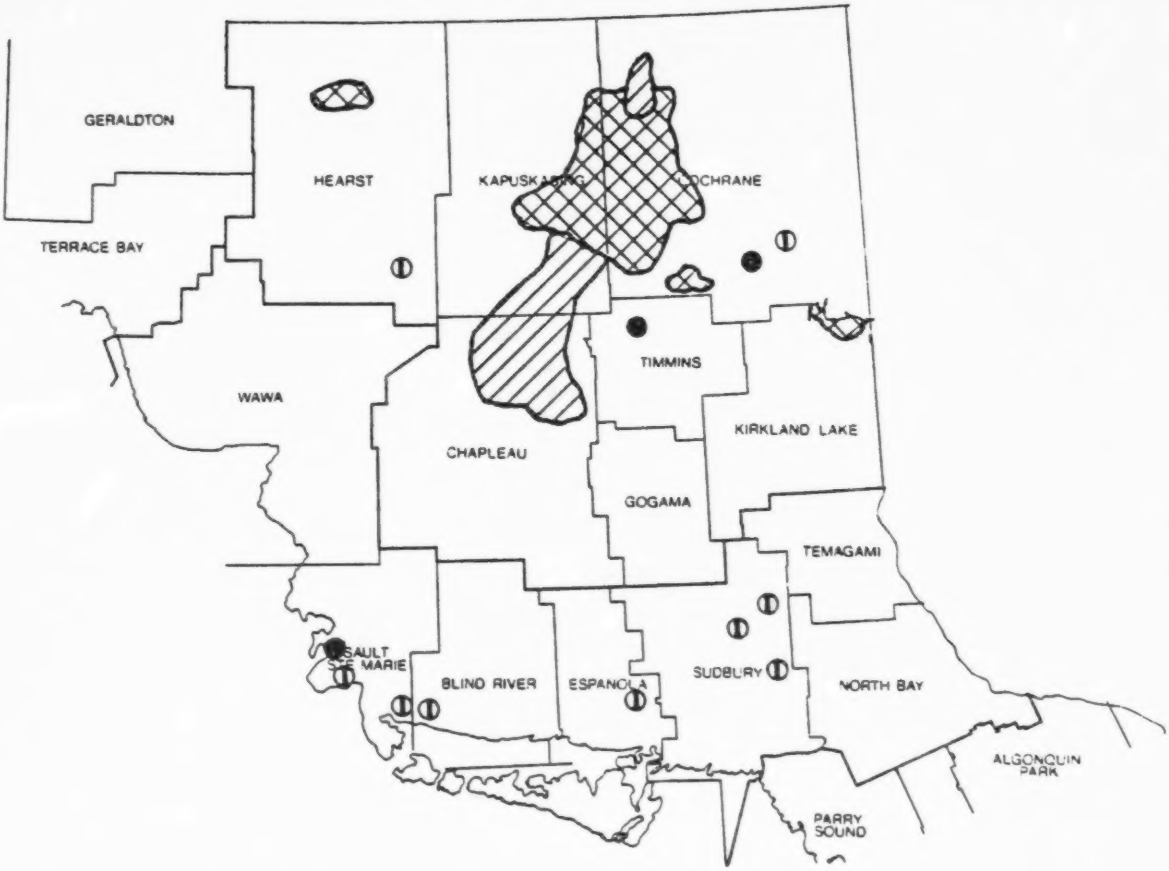
0 Kilometres 96

Areas within which defoliation occurred in 1975

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
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SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

Areas within which defoliation occurred in 1950

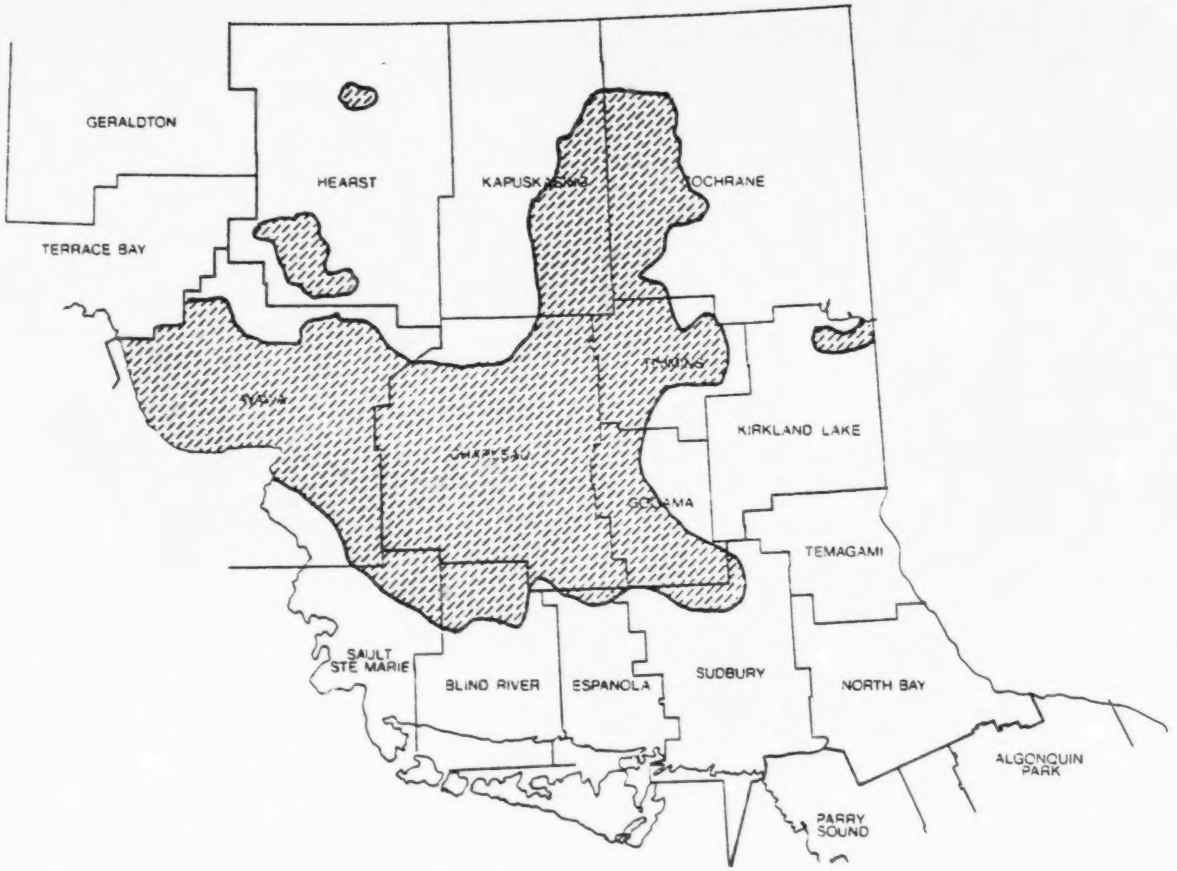
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

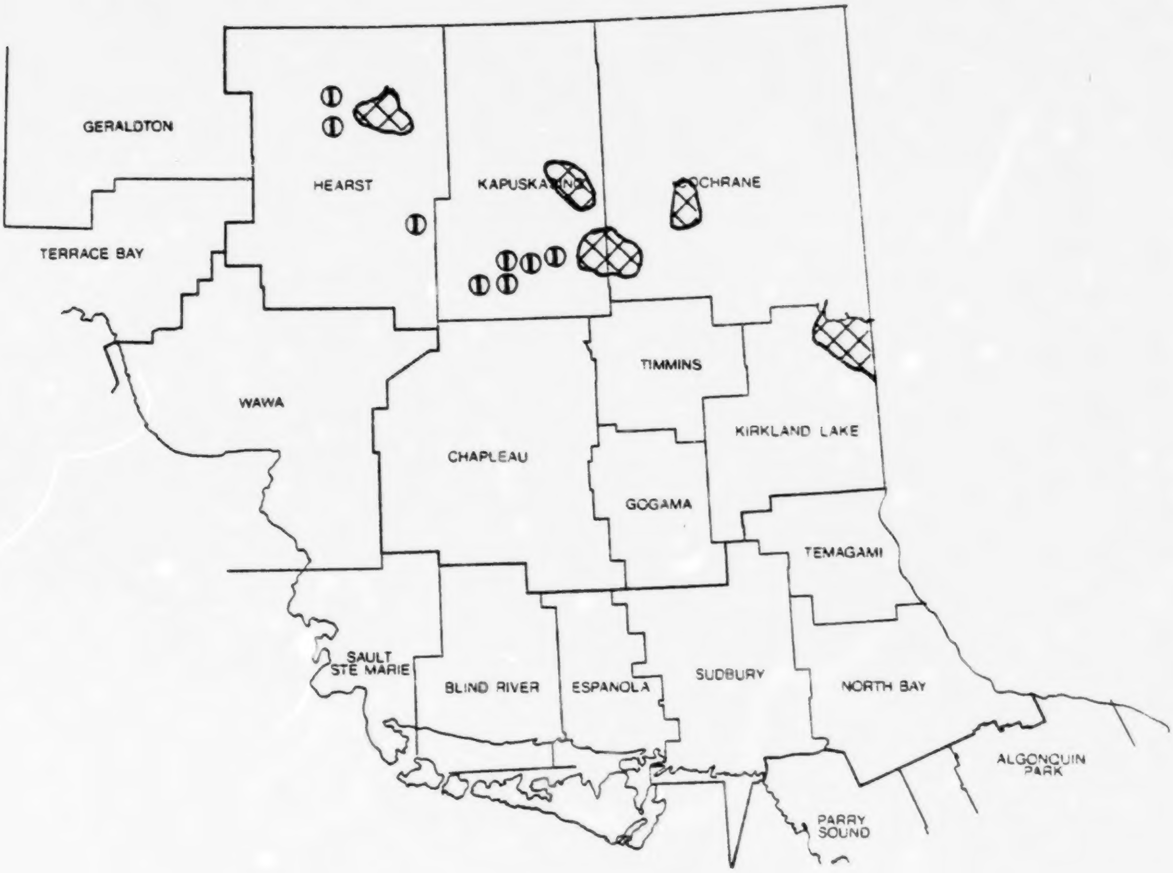
Areas within which balsam fir
whole tree and top mortality
occurred in 1950

0 Miles 60
0 Kilometres 96

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

Spruce Budworm

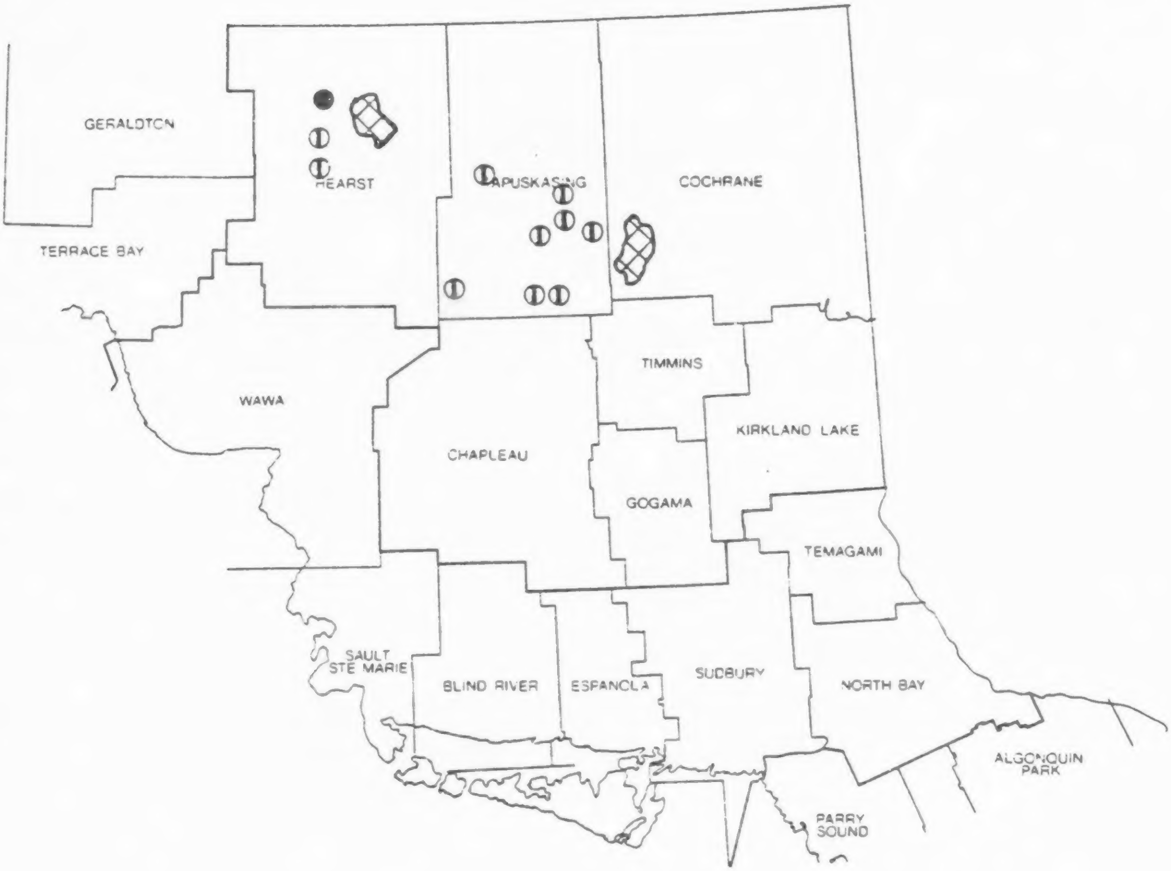
Areas within which defoliation occurred in 1951

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

Spruce Budworm

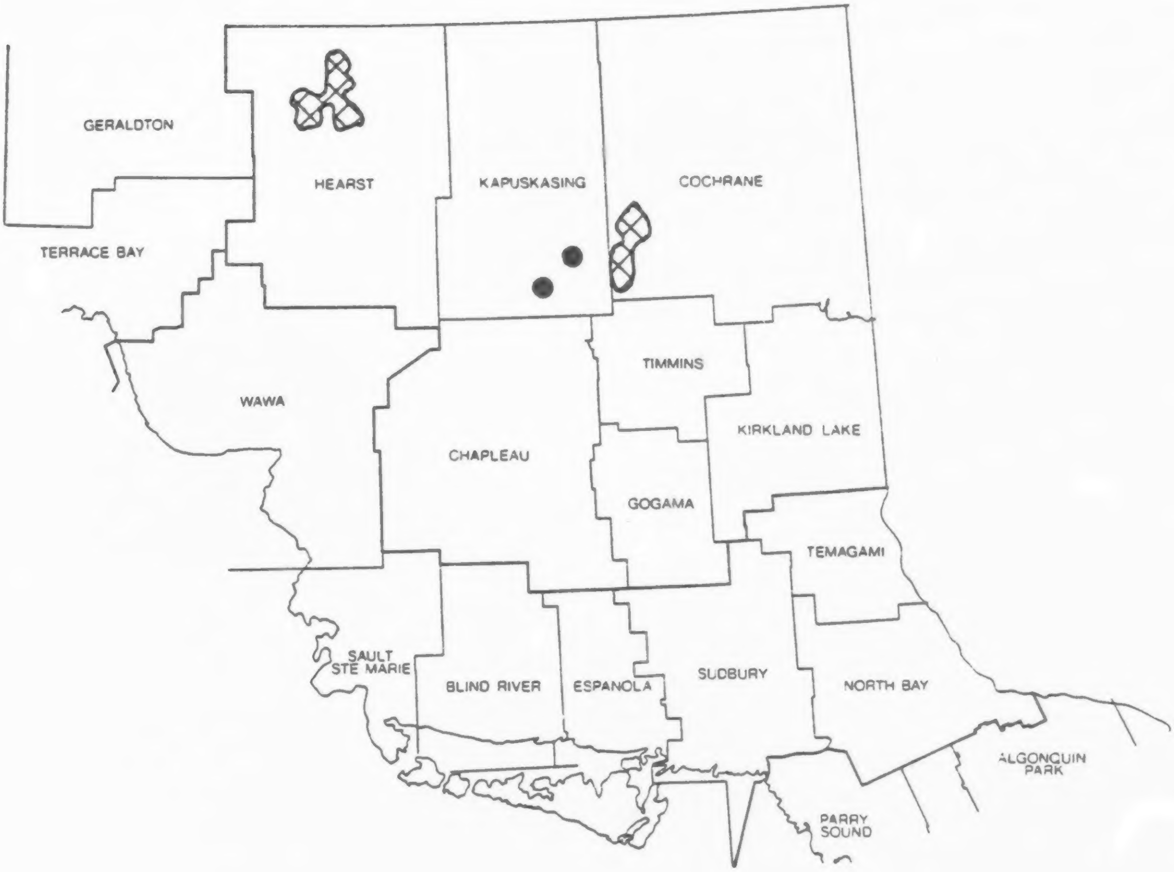
Areas within which defoliation
occurred in 1952

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

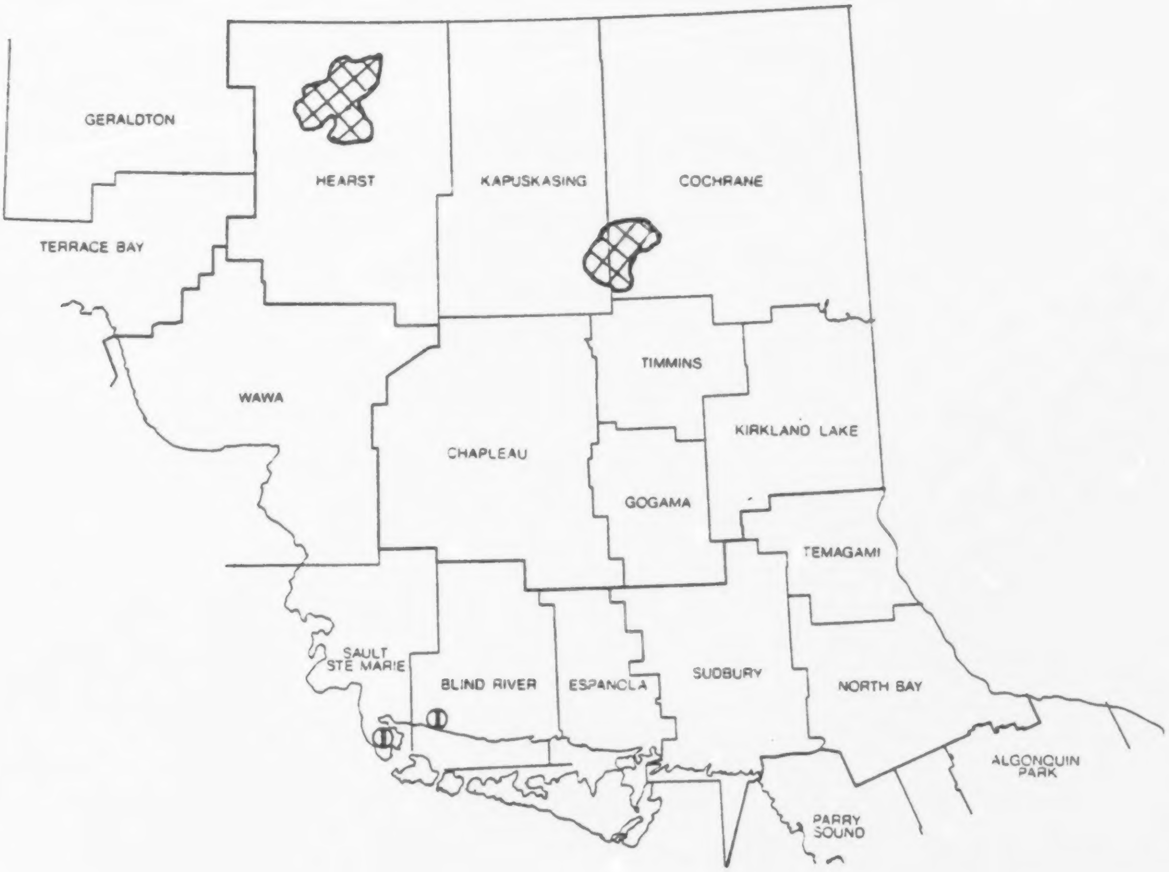
0 Miles 60
0 Kilometres 96

Areas within which defoliation
occurred in 1953

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

Spruce Budworm

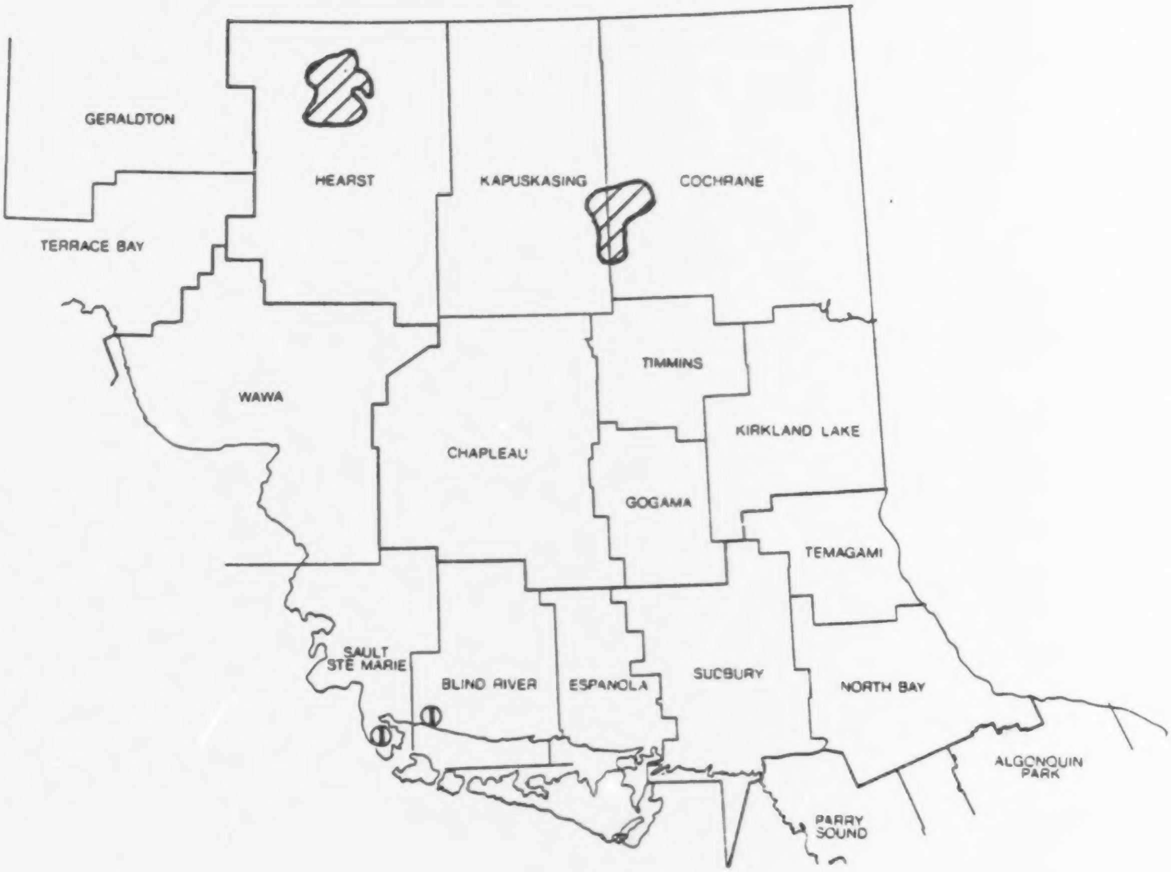
Areas within which defoliation occurred in 1954

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

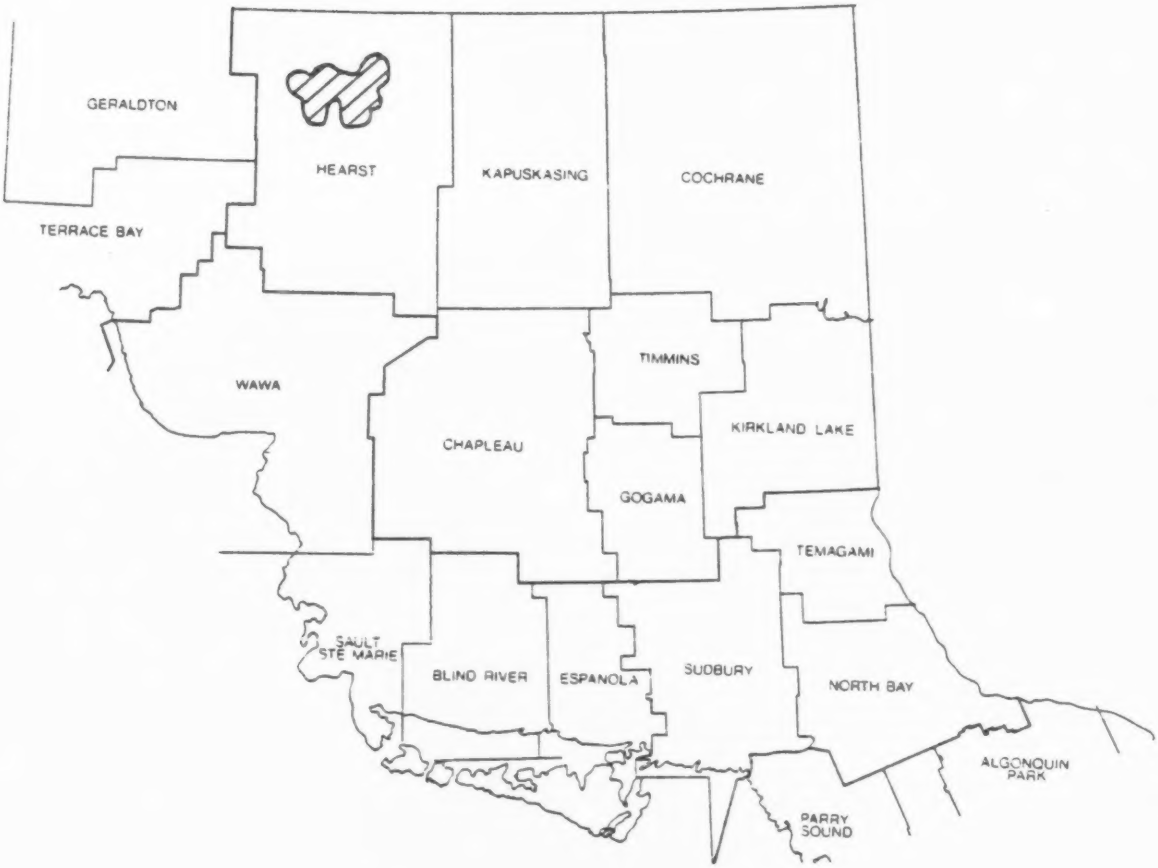
Spruce Budworm

Areas within which defoliation occurred in 1955

LEGEND

Light defoliation ◑ or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

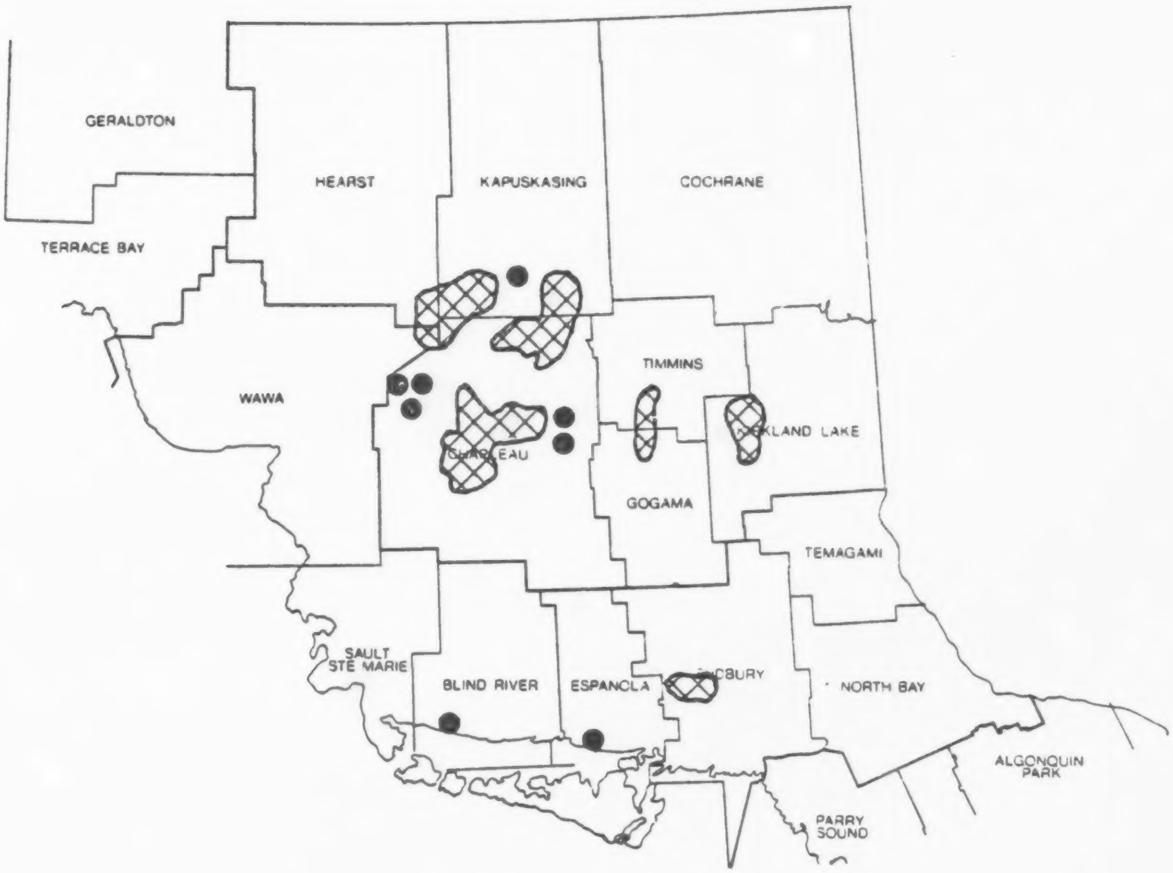
Spruce Budworm

Areas within which defoliation occurred in 1956

LEGEND

Light defoliation ▨

NORTHEASTERN ONTARIO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COCHRANE
WAWA
TIMMINS
CHAPLEAU
KIRKLAND LAKE
GOGAMA
TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

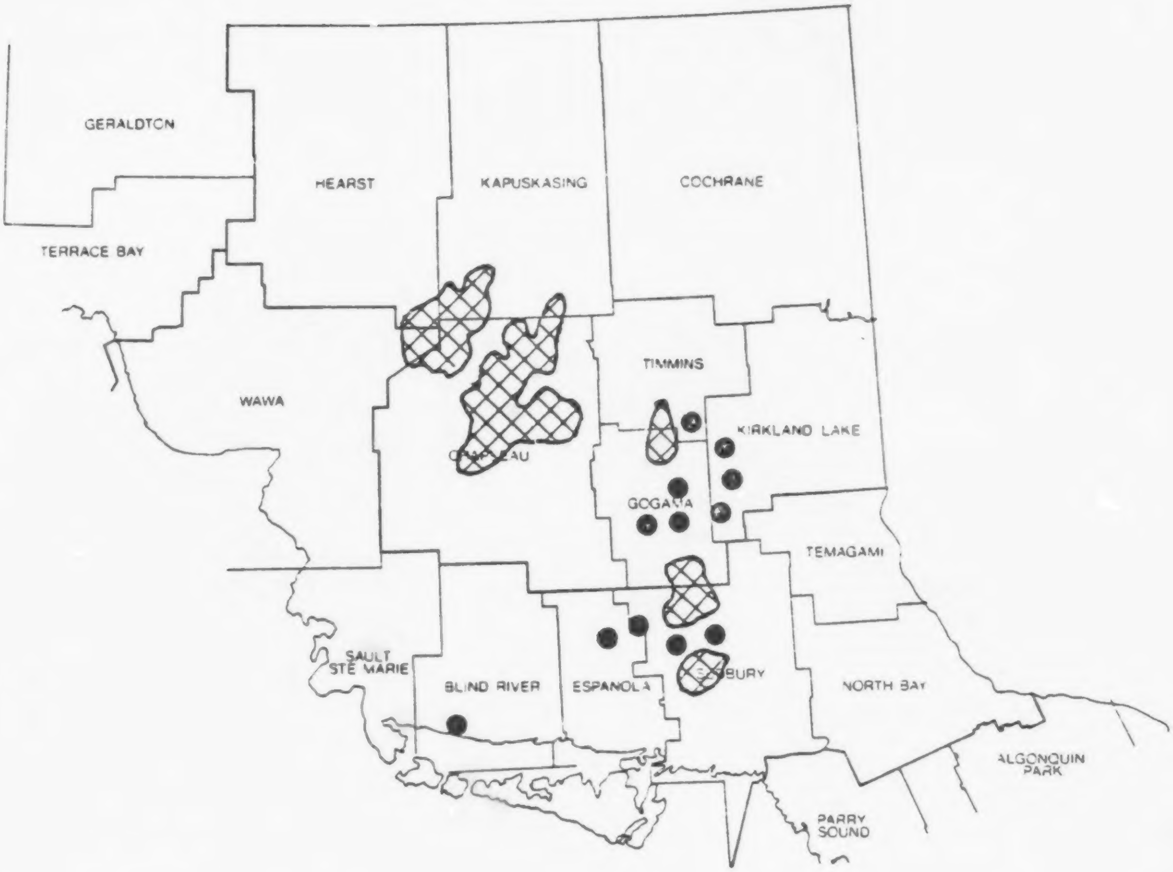
Spruce Budworm

Areas within which defoliation occurred in 1968

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

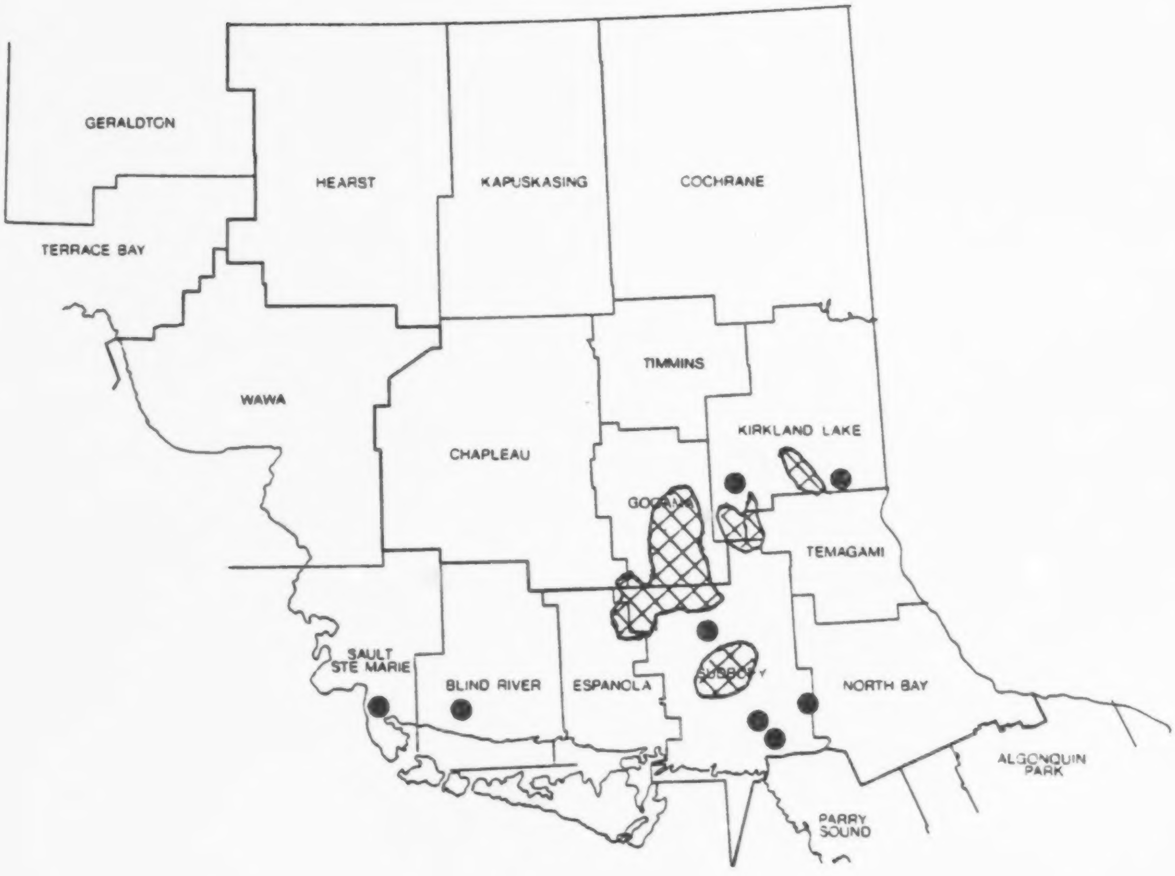
Spruce Budworm

Areas within which defoliation occurred in 1969

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

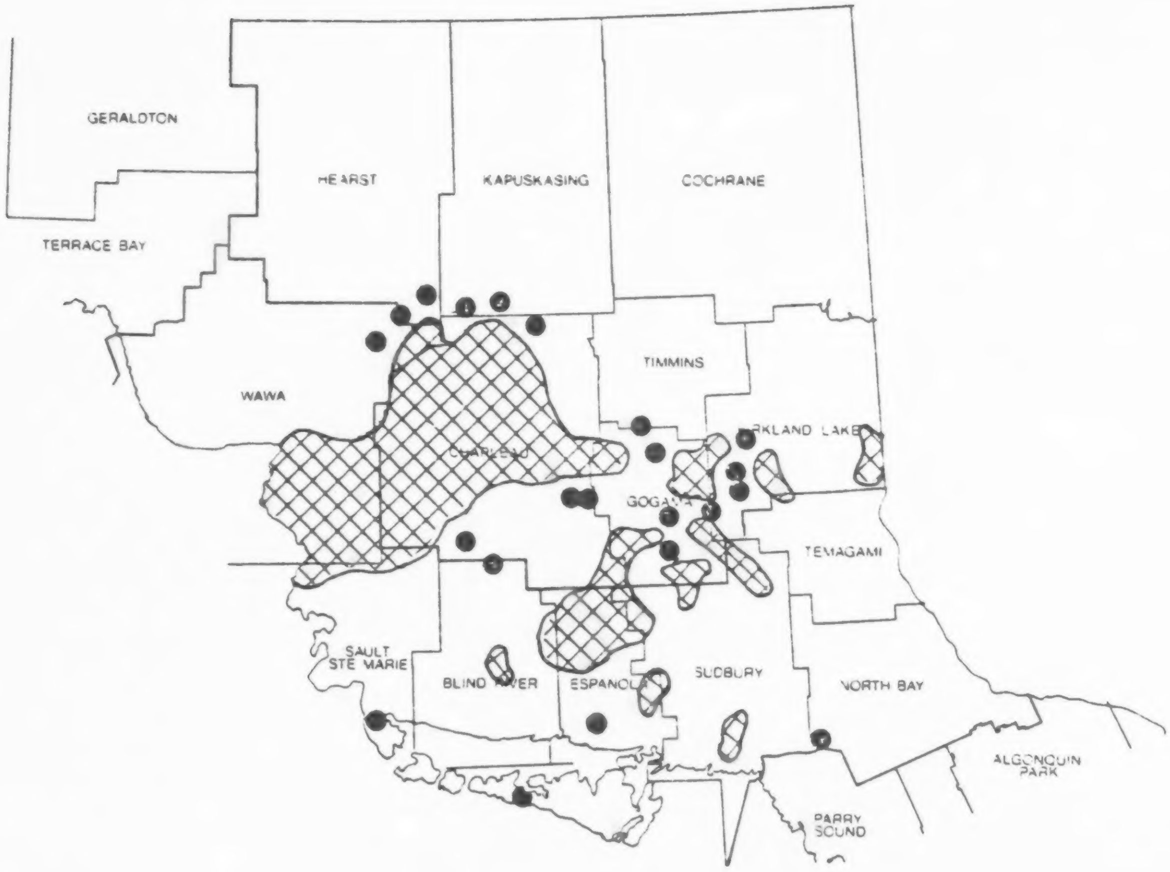
Spruce Budworm

Areas within which defoliation occurred in 1970

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOL
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

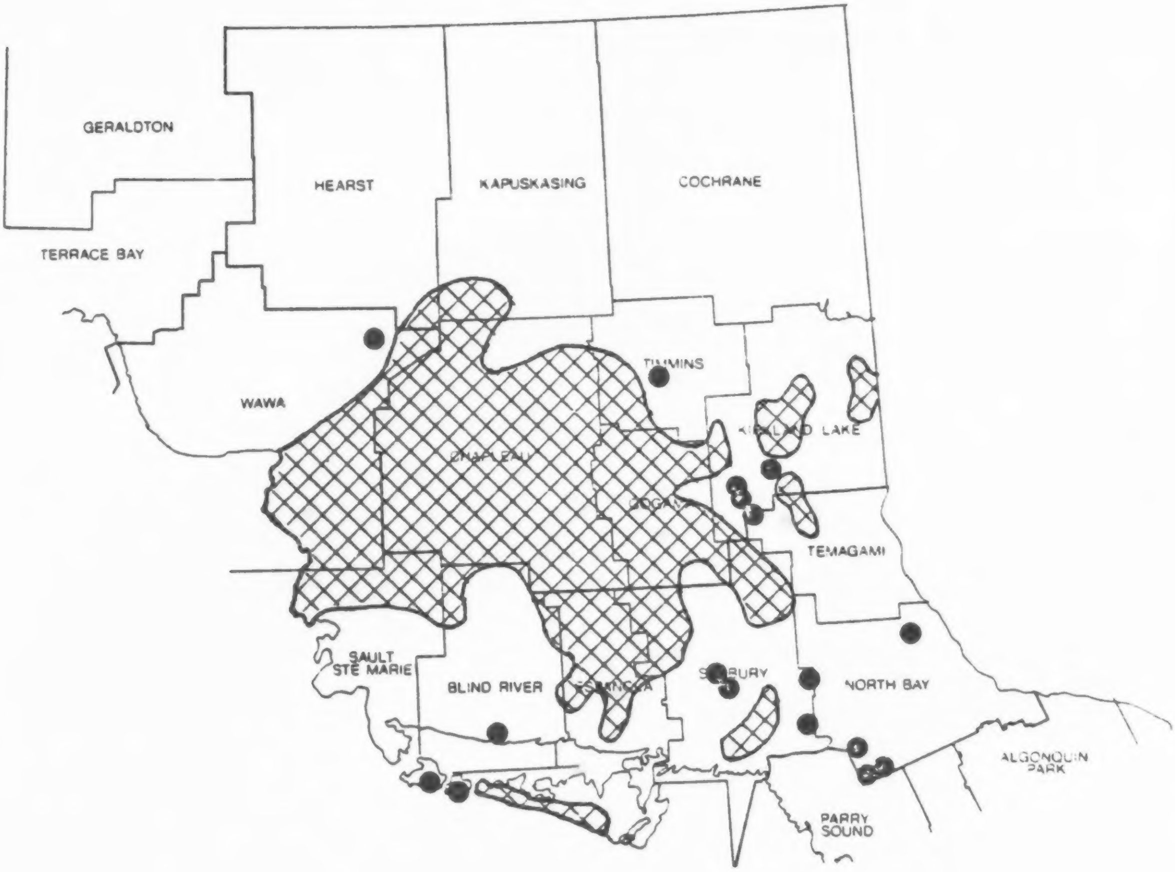
Spruce Budworm

Areas within which defoliation occurred in 1971

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

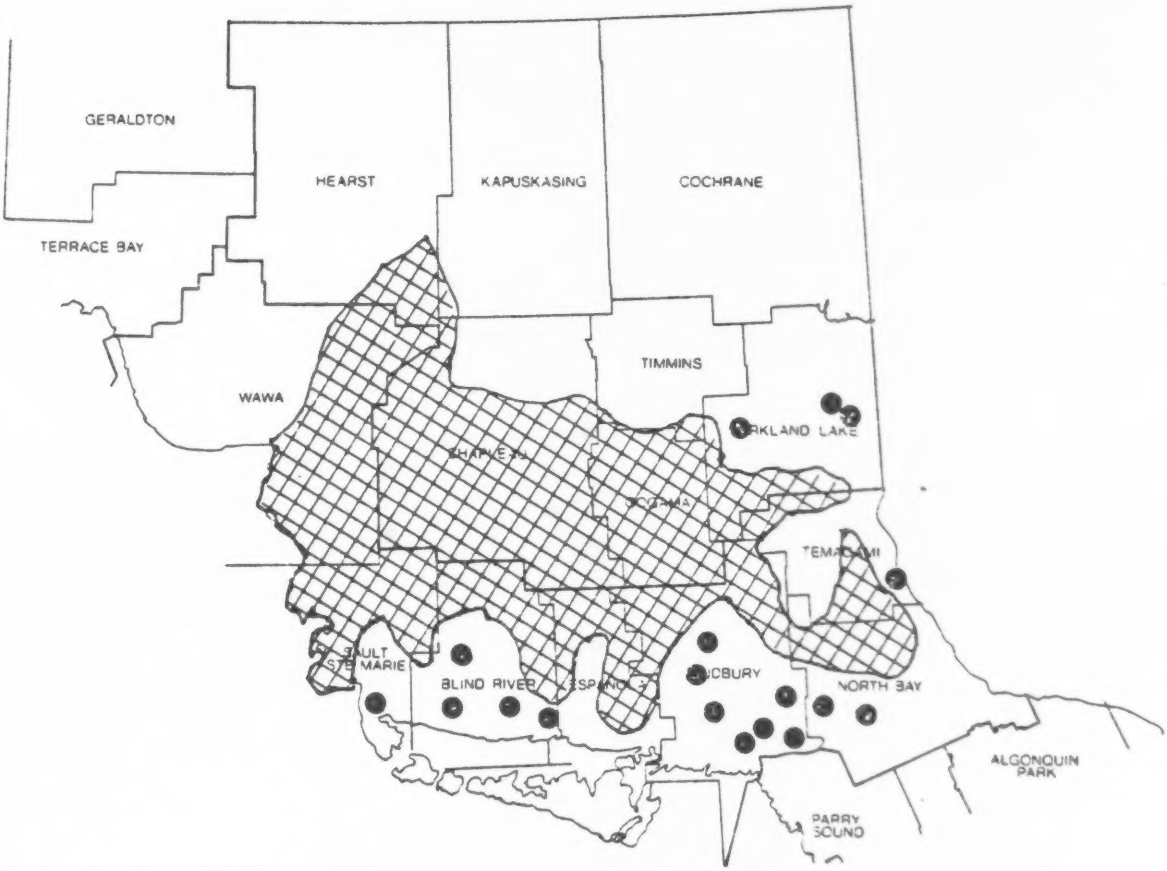
Spruce Budworm

Areas within which defoliation occurred in 1972

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

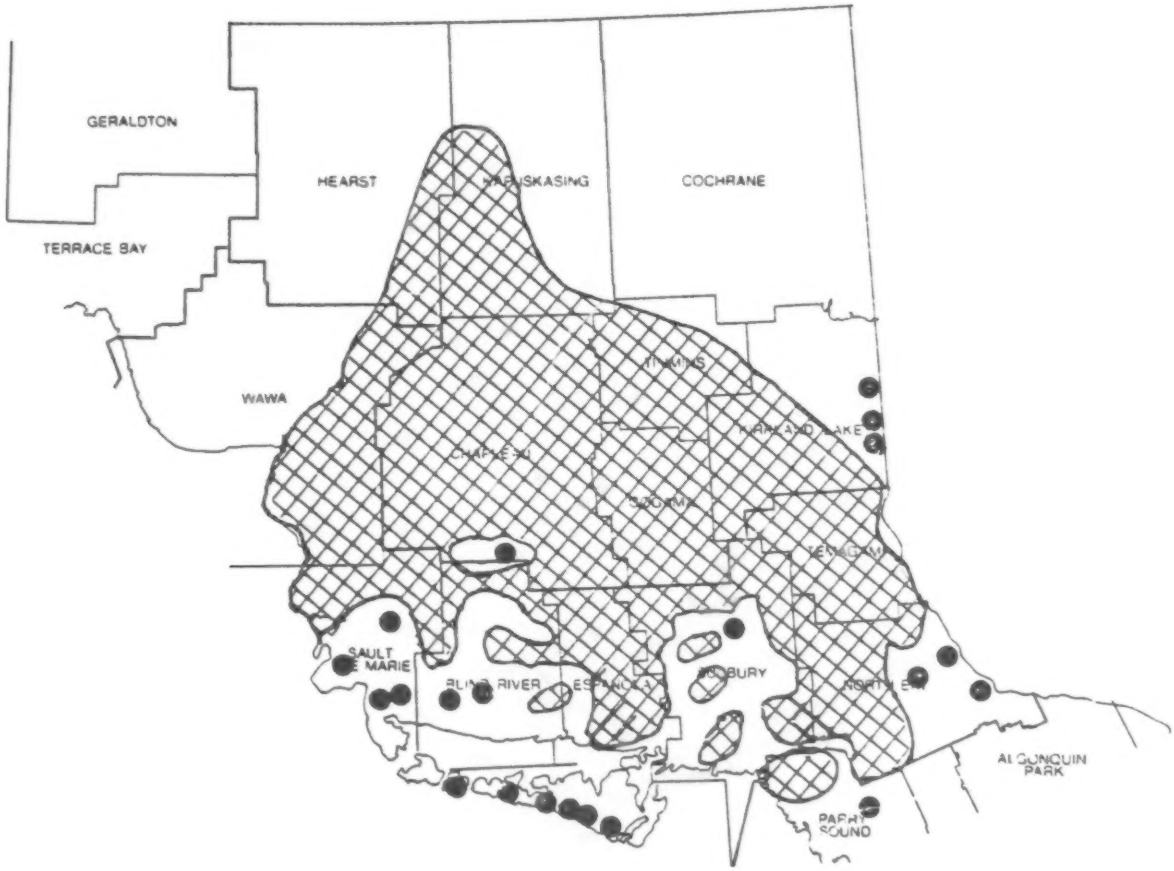
Spruce Budworm

Areas within which defoliation occurred in 1973

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

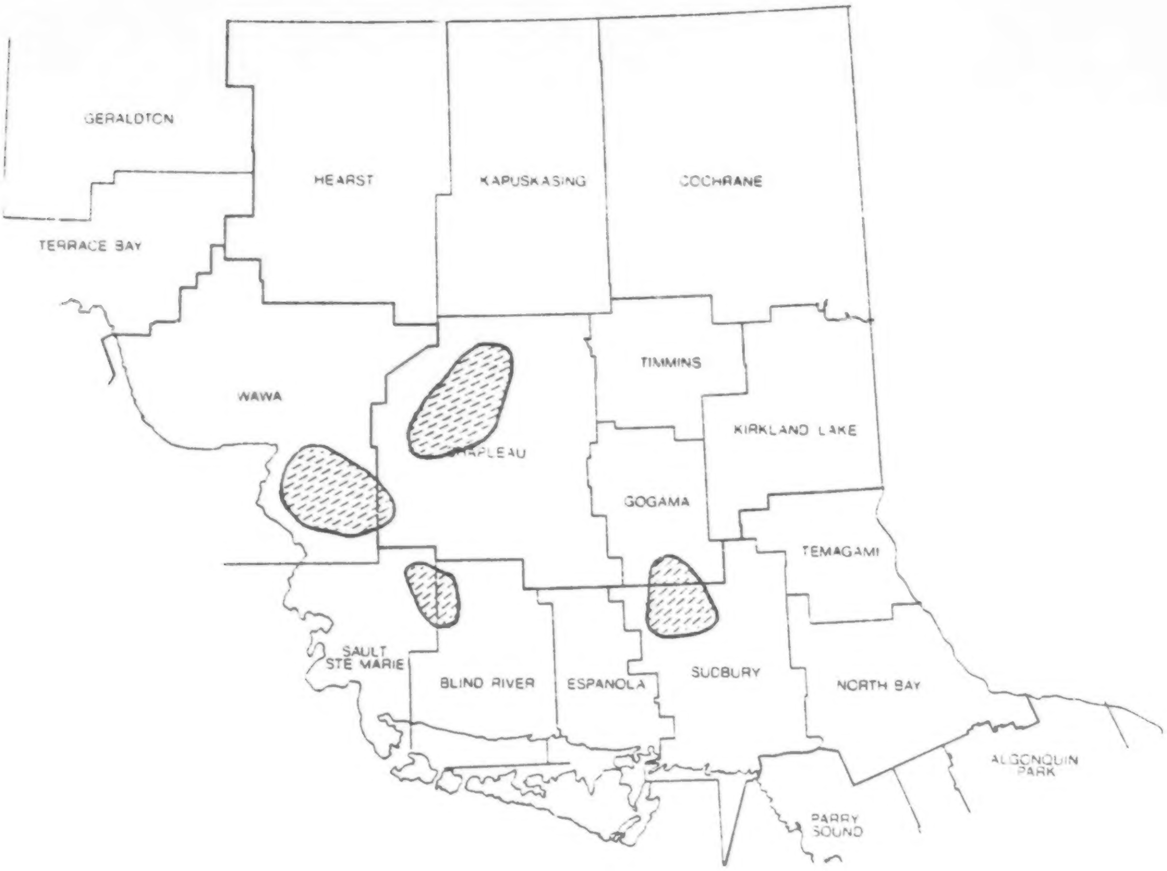
Spruce Budworm

Areas within which defoliation occurred in 1974

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1974

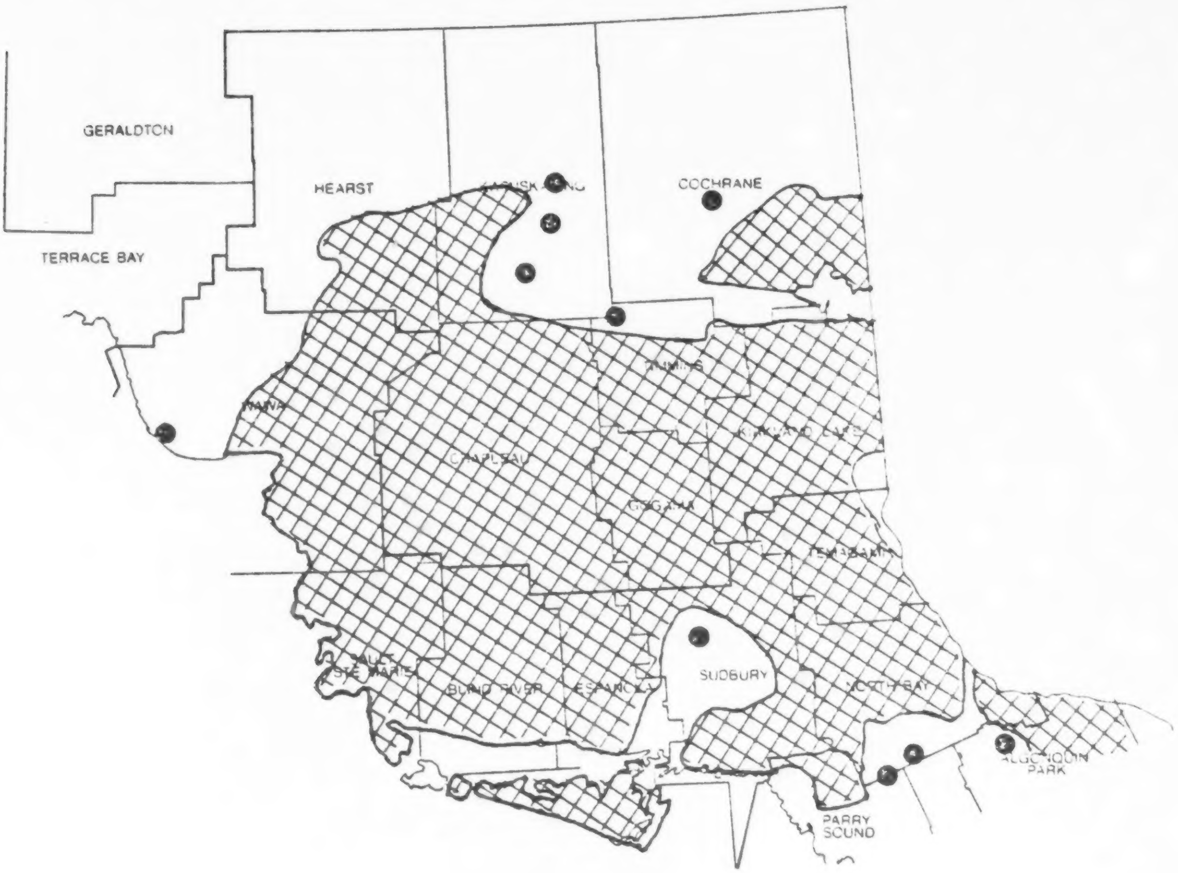
0 Miles 60

0 Kilometres 96

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

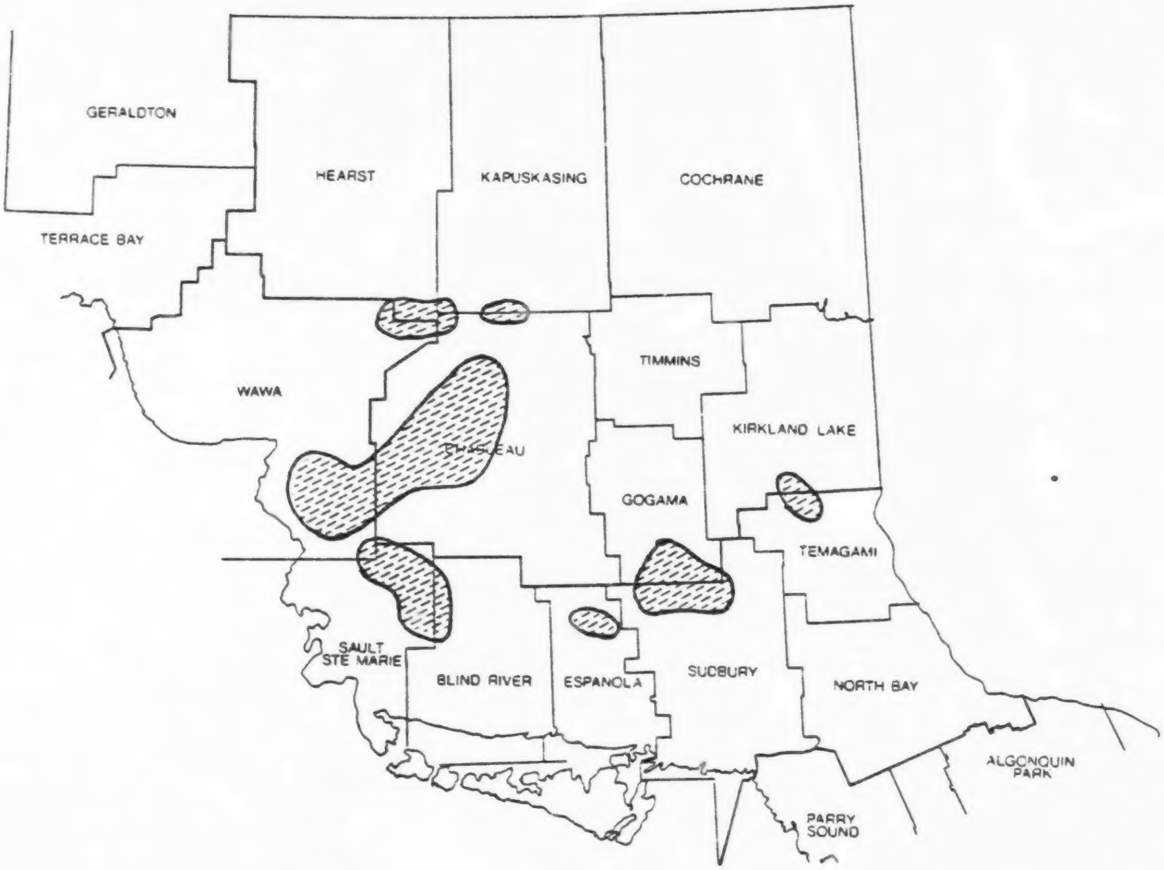
Spruce Budworm

Areas within which defoliation
occurred in 1975

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1975

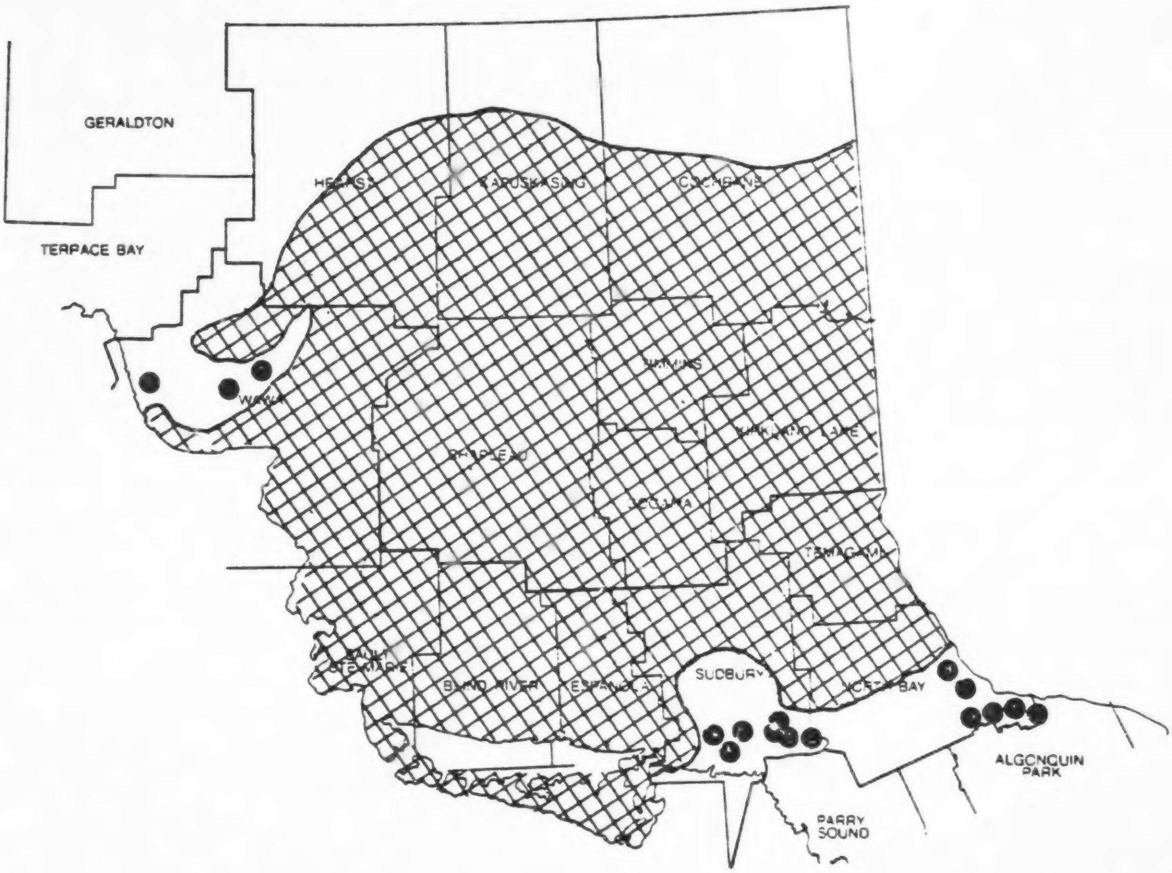
0 Miles 60

0 Kilometres 96

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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SAULT STE. MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

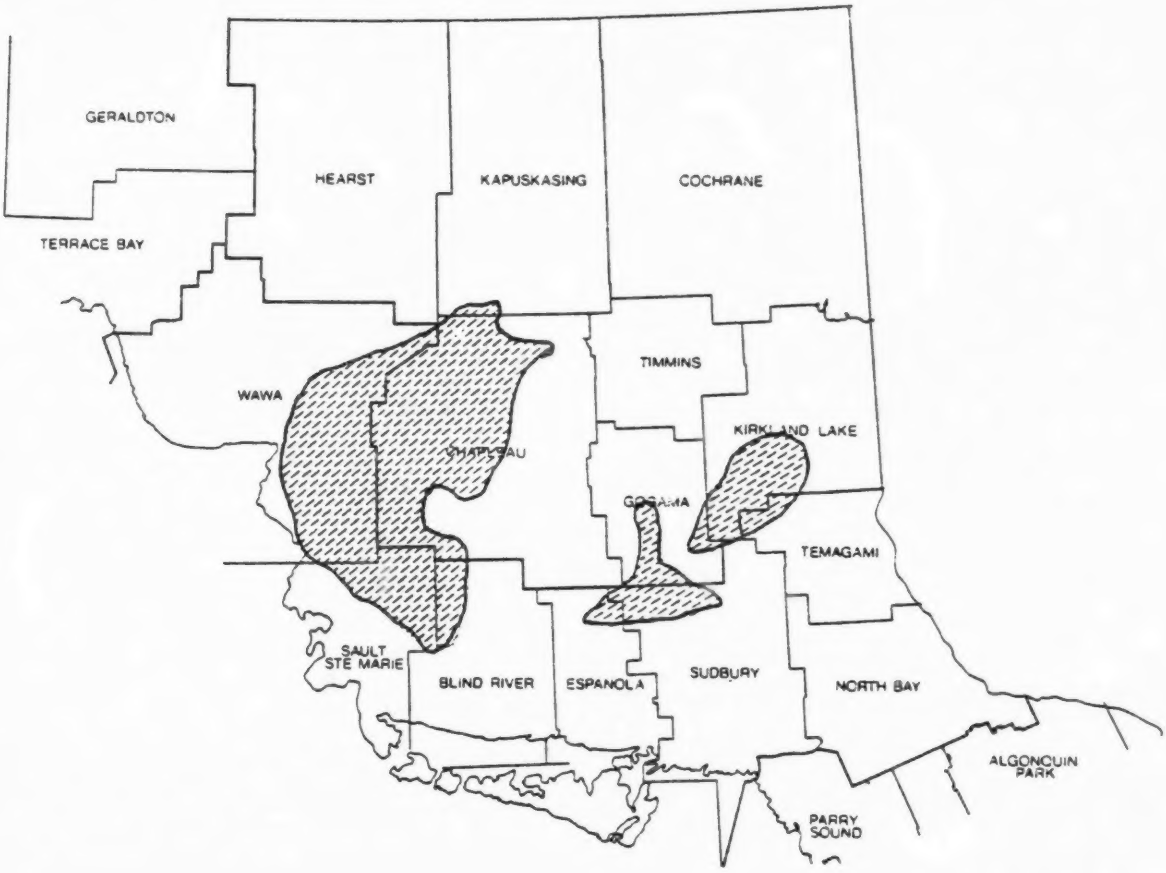
Spruce Budworm

Areas within which defoliation occurred in 1976

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1976

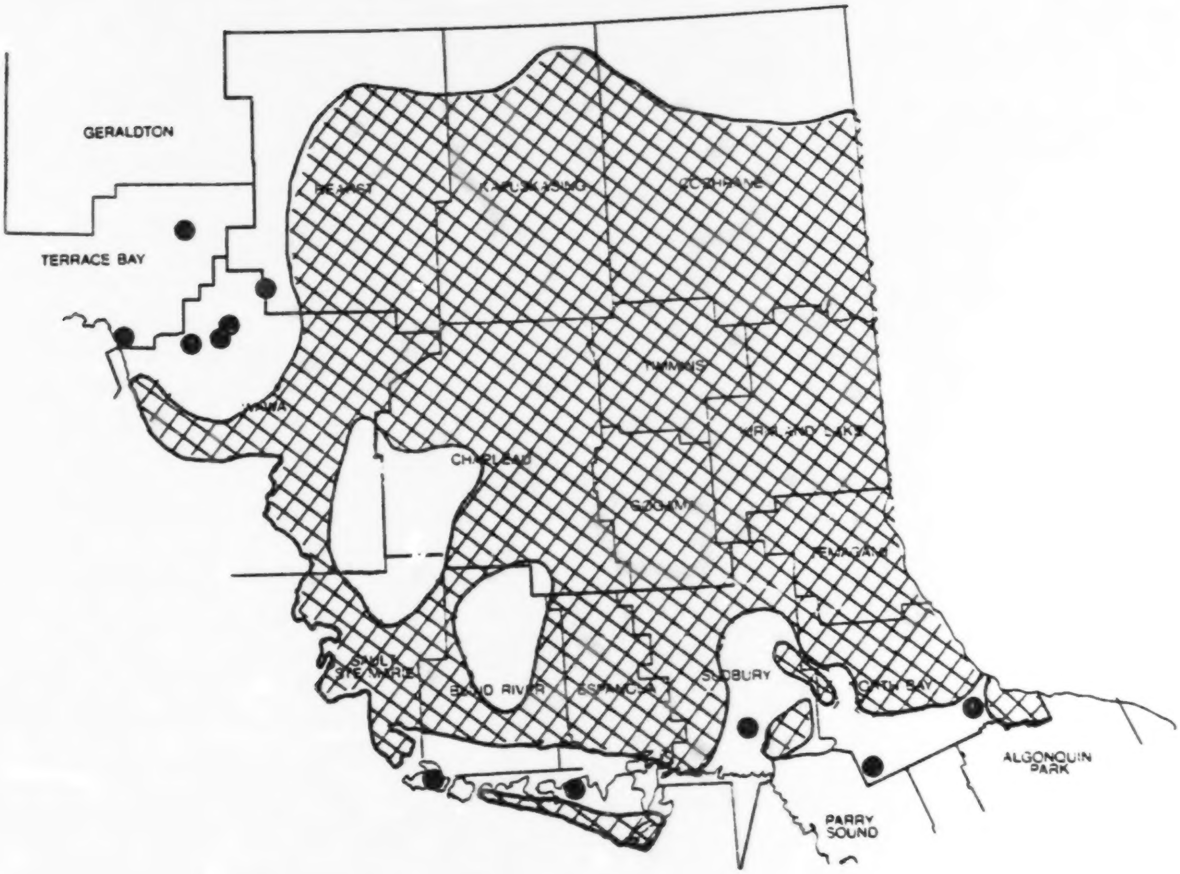
0 Miles 60

0 Kilometres 96

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

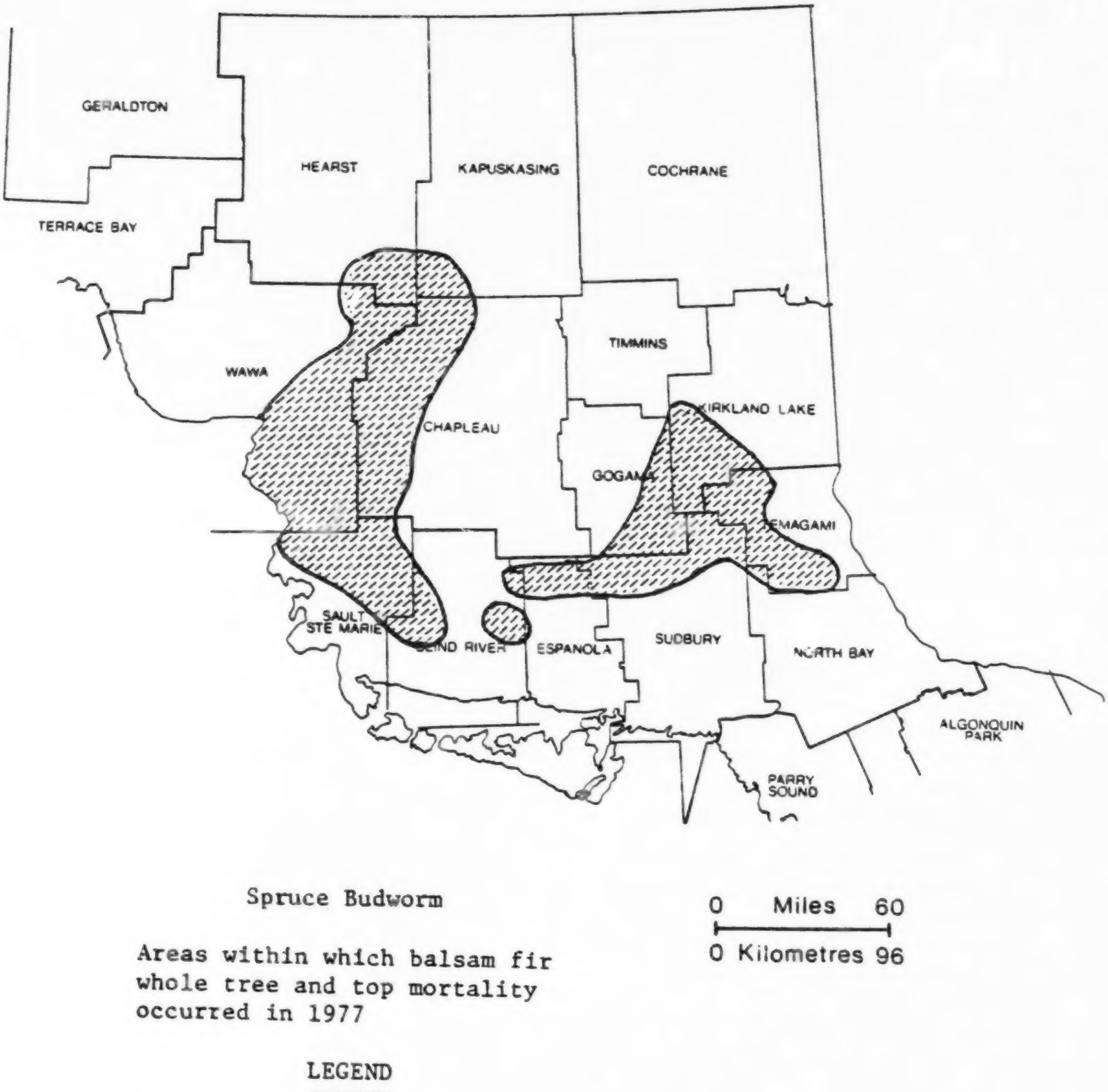
Spruce Budworm

Areas within which defoliation occurred in 1977

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

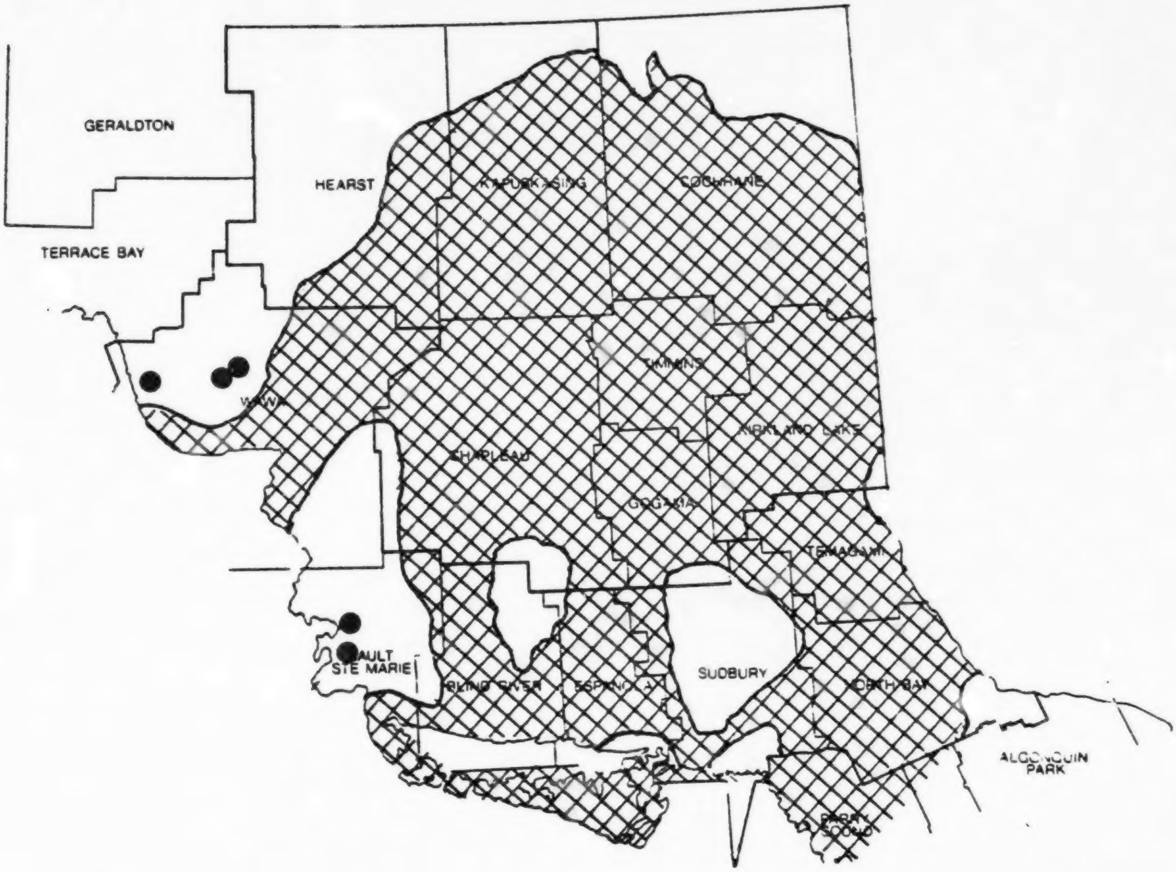
0 Miles 60
0 Kilometres 96

Areas within which balsam fir whole tree and top mortality occurred in 1977

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

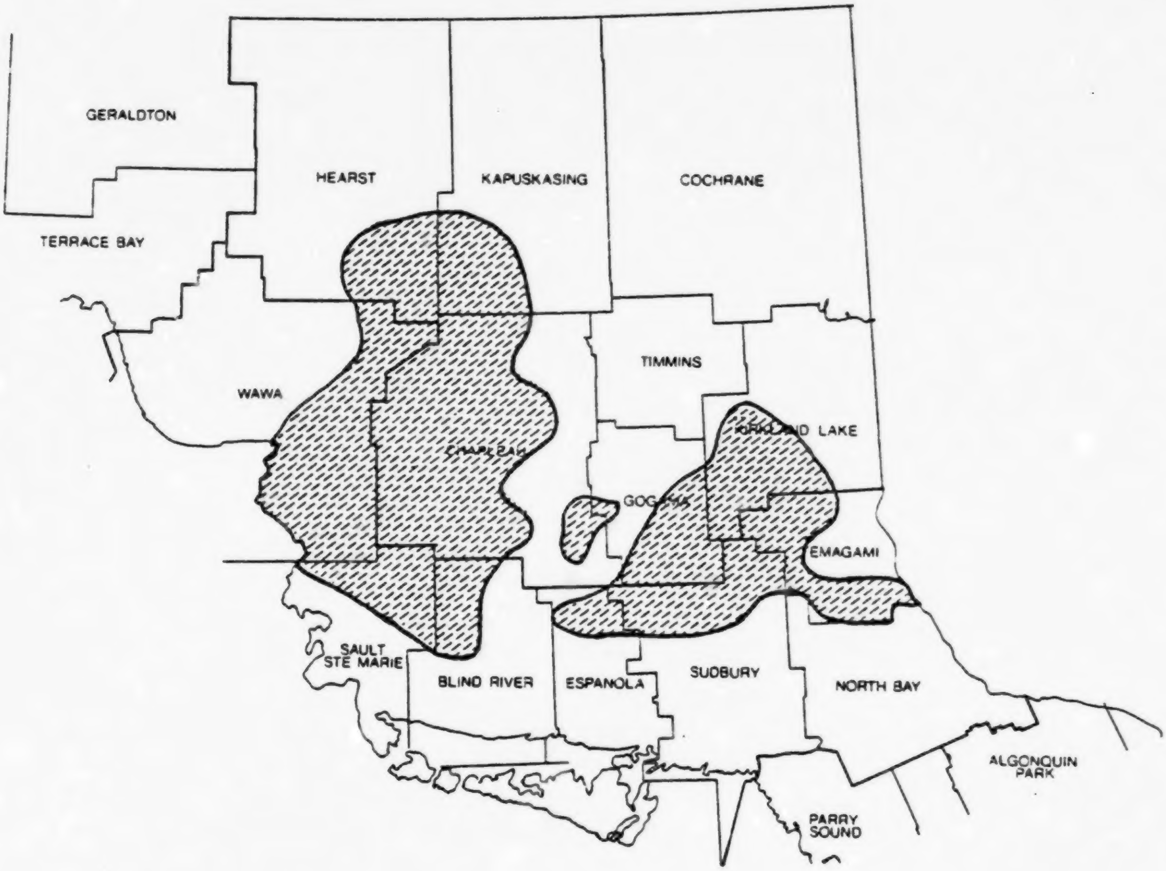
Spruce Budworm

Areas within which defoliation occurred in 1978

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

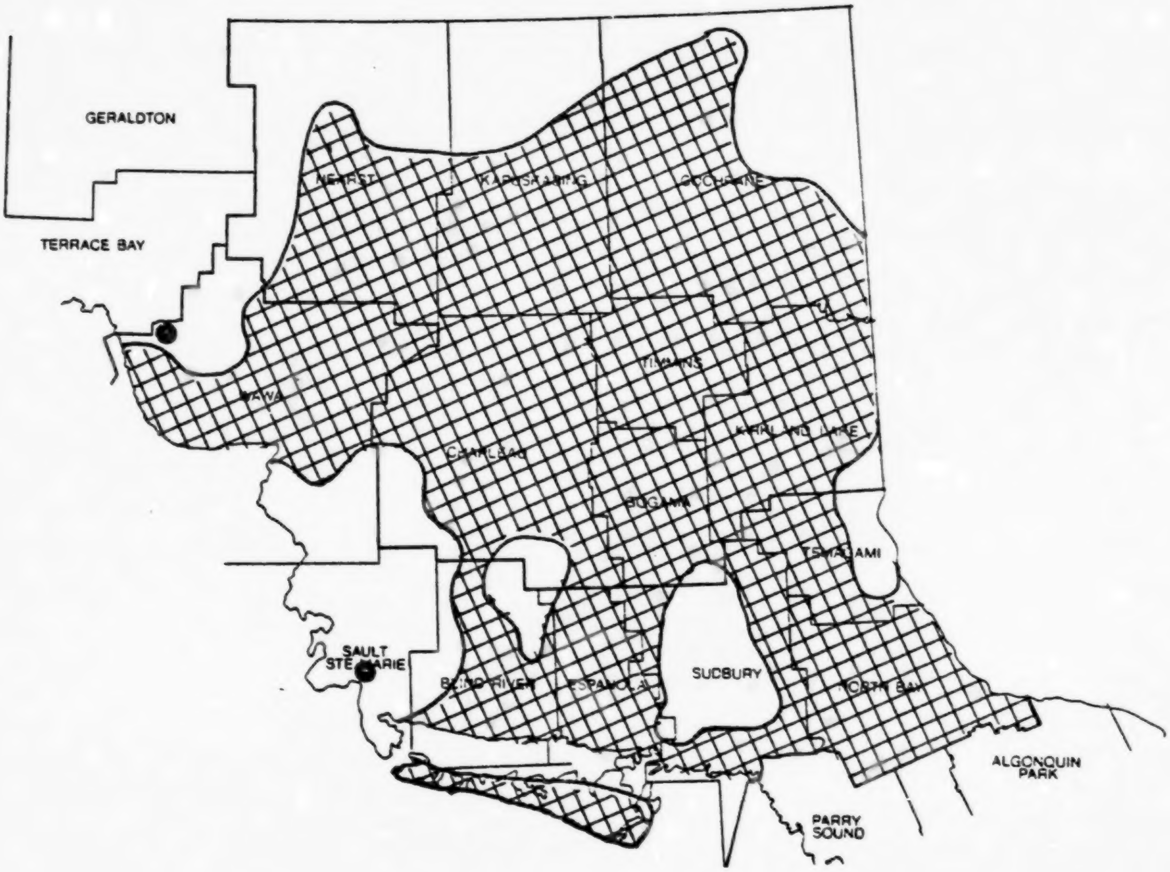
Areas within which balsam fir whole tree and top mortality occurred in 1978

0 Miles 60
0 Kilometres 96

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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SAULT
STE. MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN
PARK
PARRY
SOUND
0 Miles 60
0 Kilometres 96

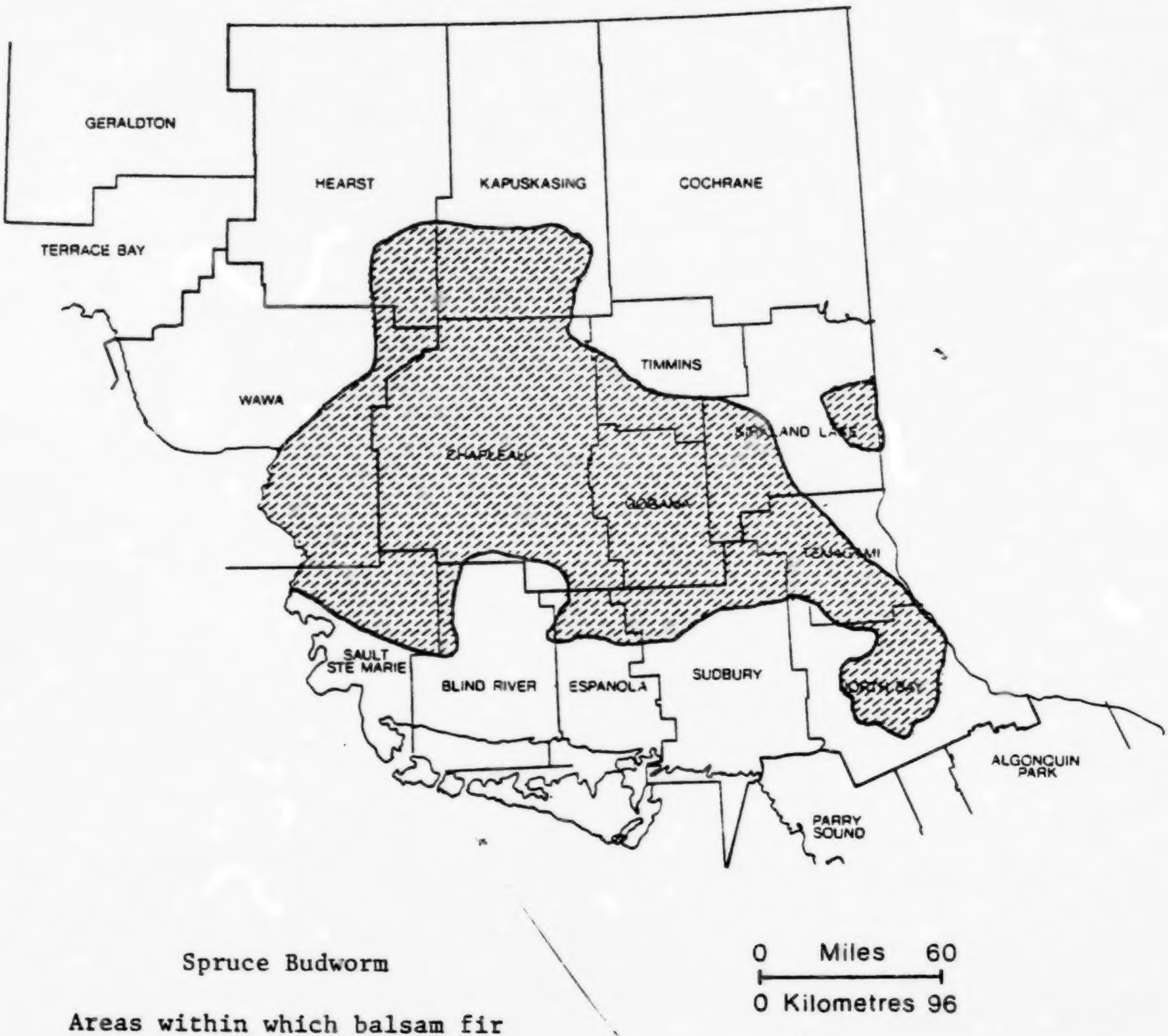
Spruce Budworm

Areas within which defoliation
occurred in 1979

LEGEND

Moderate-to-severe defoliation ● or ▦

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

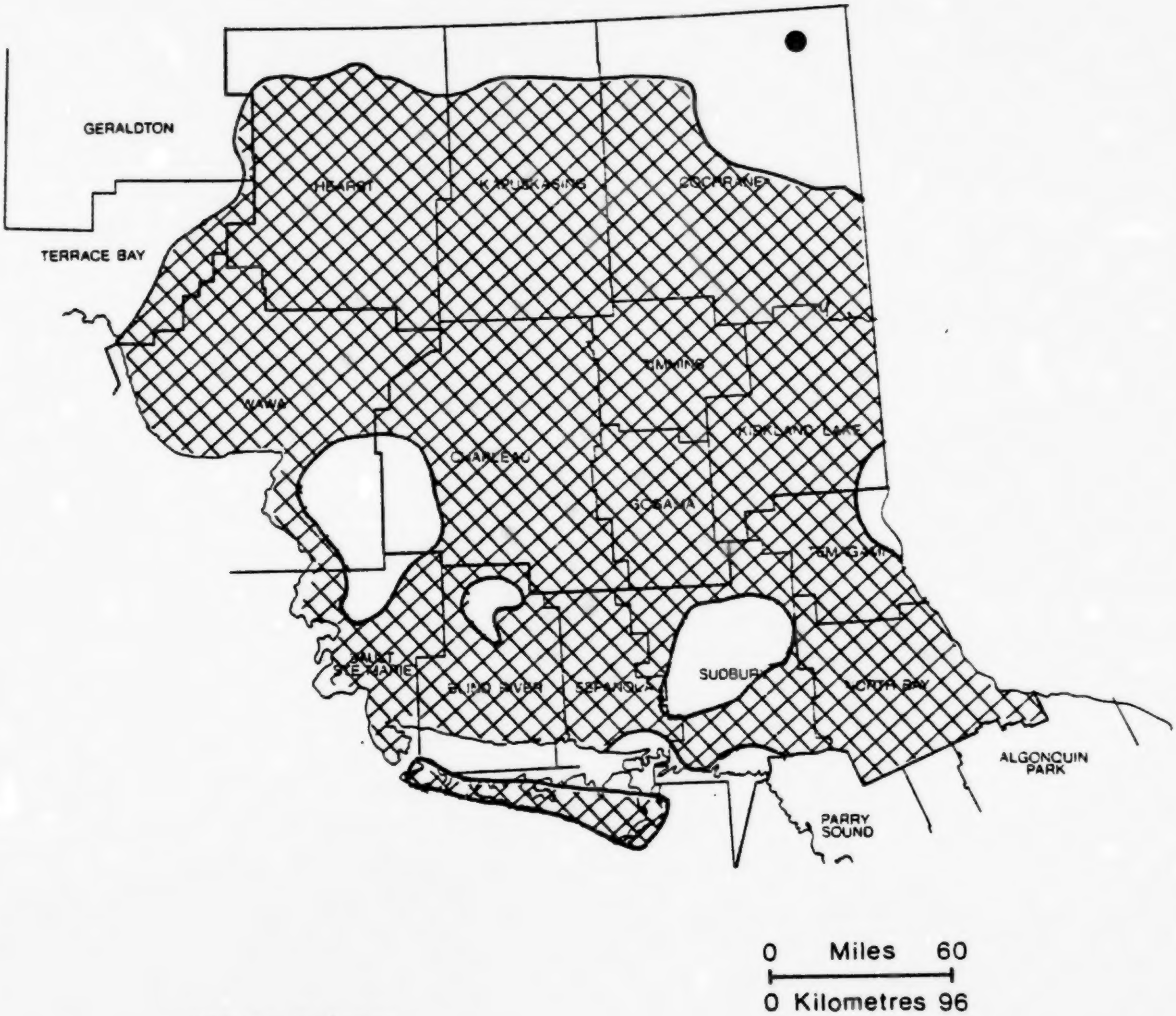
Spruce Budworm

Areas within which balsam fir whole tree and top mortality occurred in 1979

LEGEND

Mortality ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

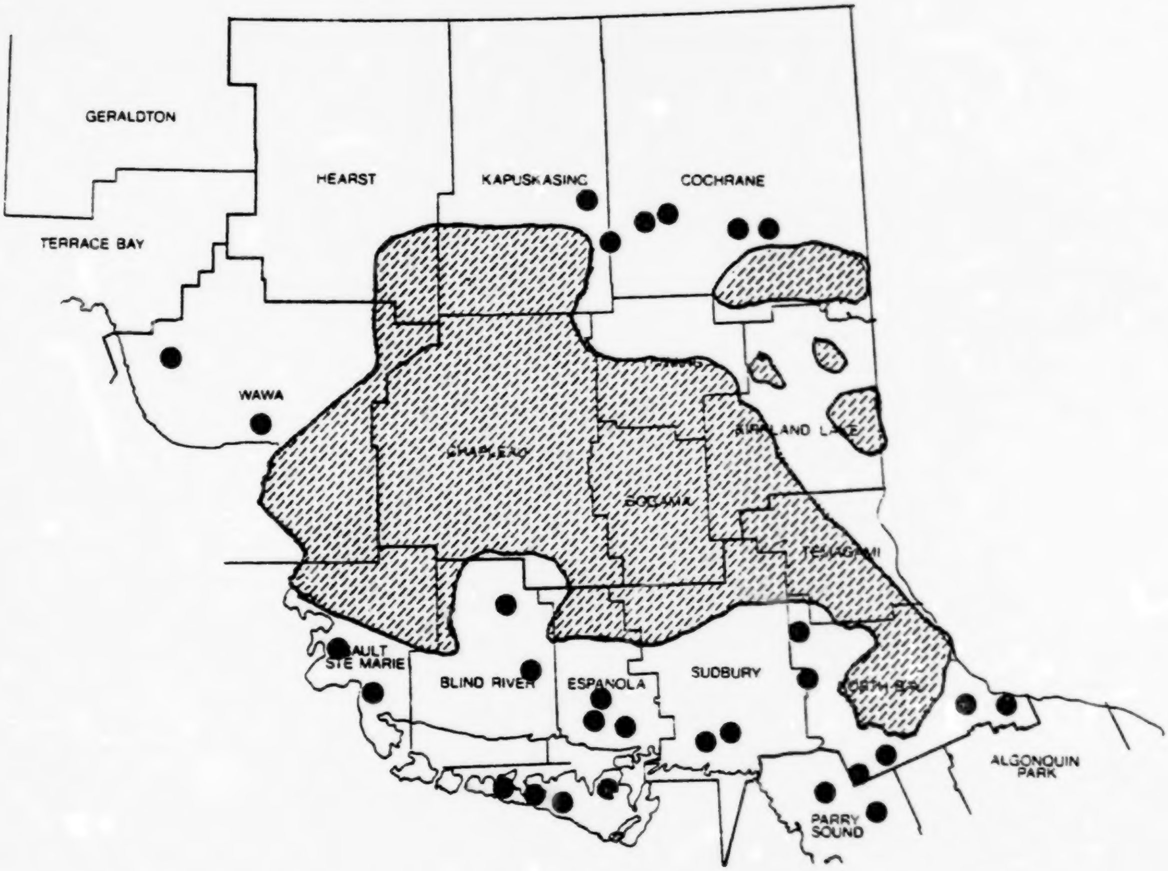
Spruce Budworm

Areas within which defoliation occurred in 1980

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO



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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Spruce Budworm

0 Miles 60

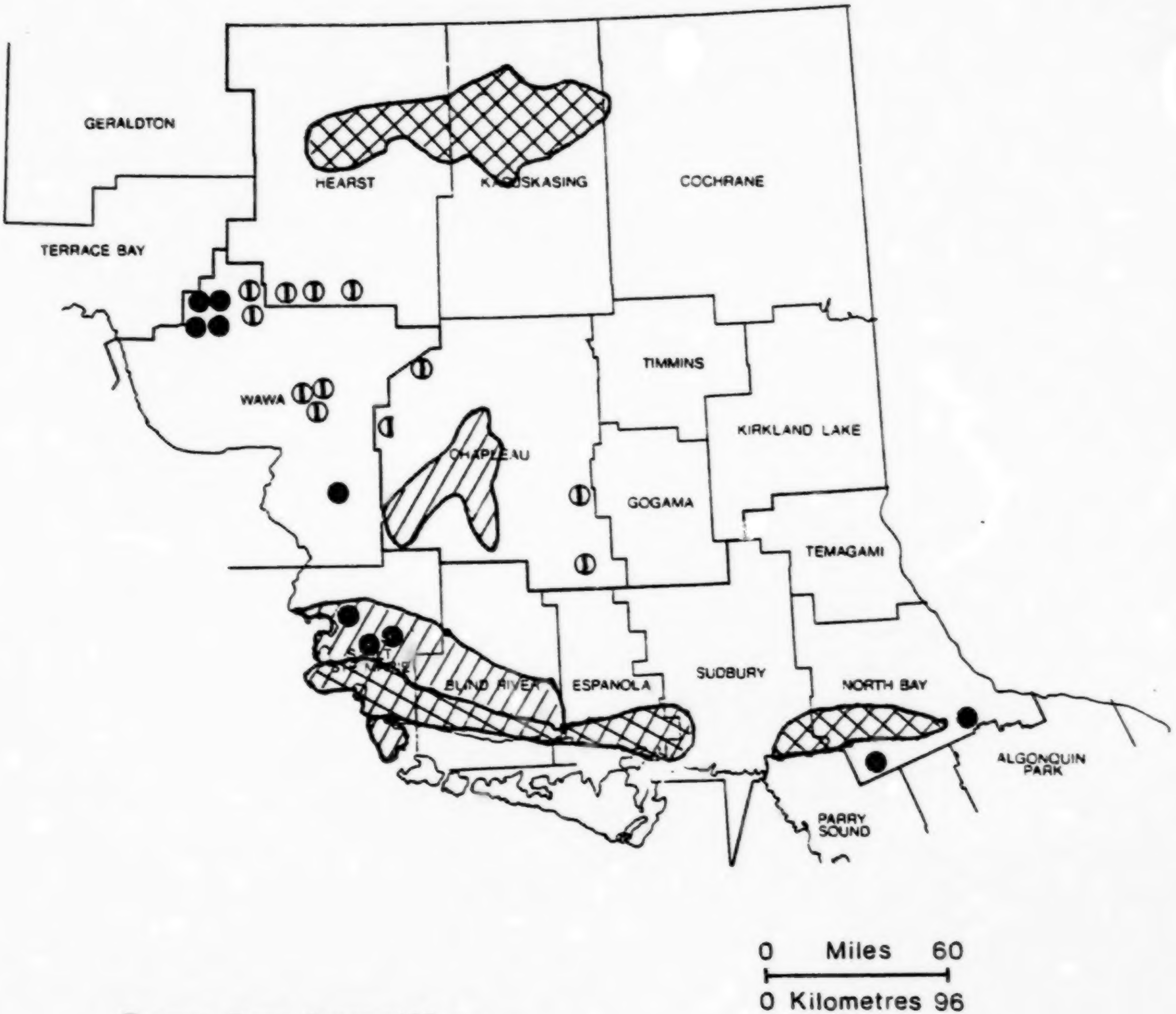
0 Kilometres 96

Areas within which balsam fir whole tree and top mortality occurred in 1980

LEGEND

Mortality ▨ or ●

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

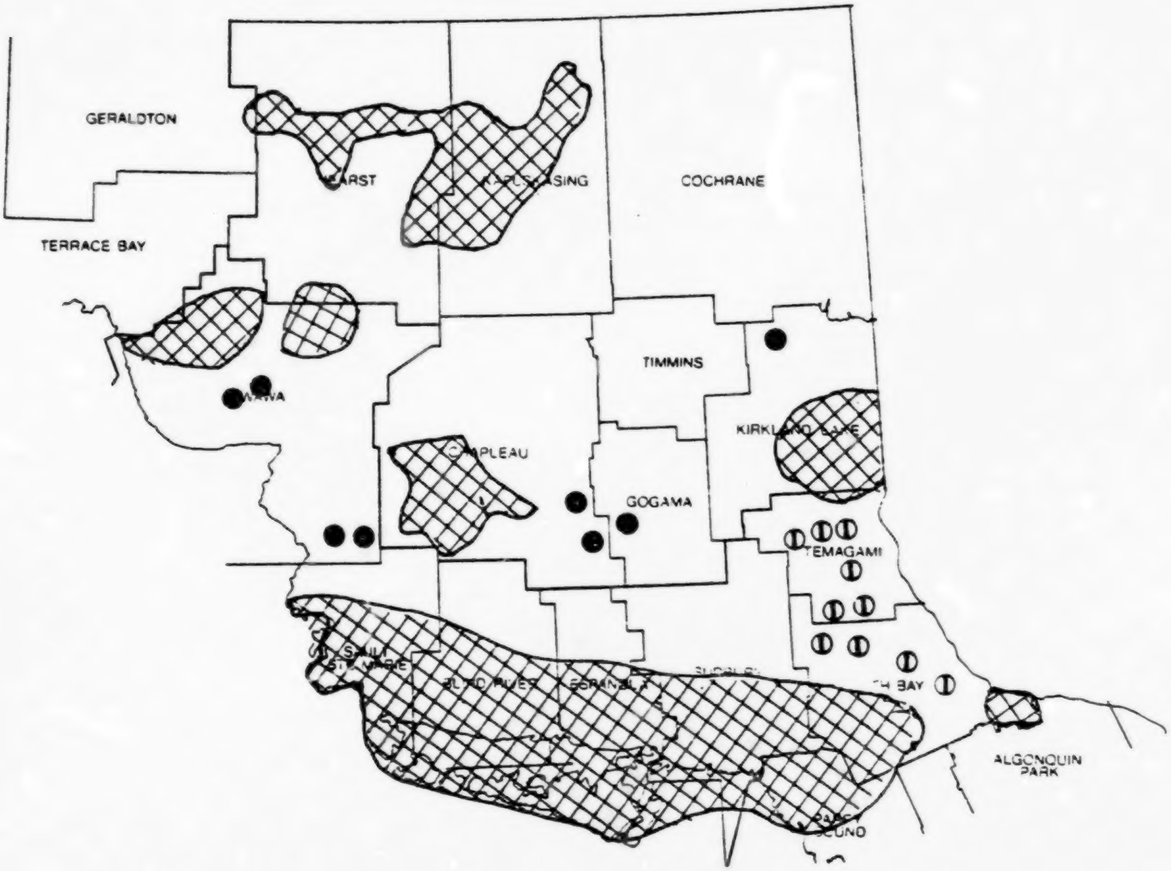
Areas within which defoliation occurred in 1950

LEGEND

Light defoliation ◑ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

0 Miles 60

0 Kilometres 96

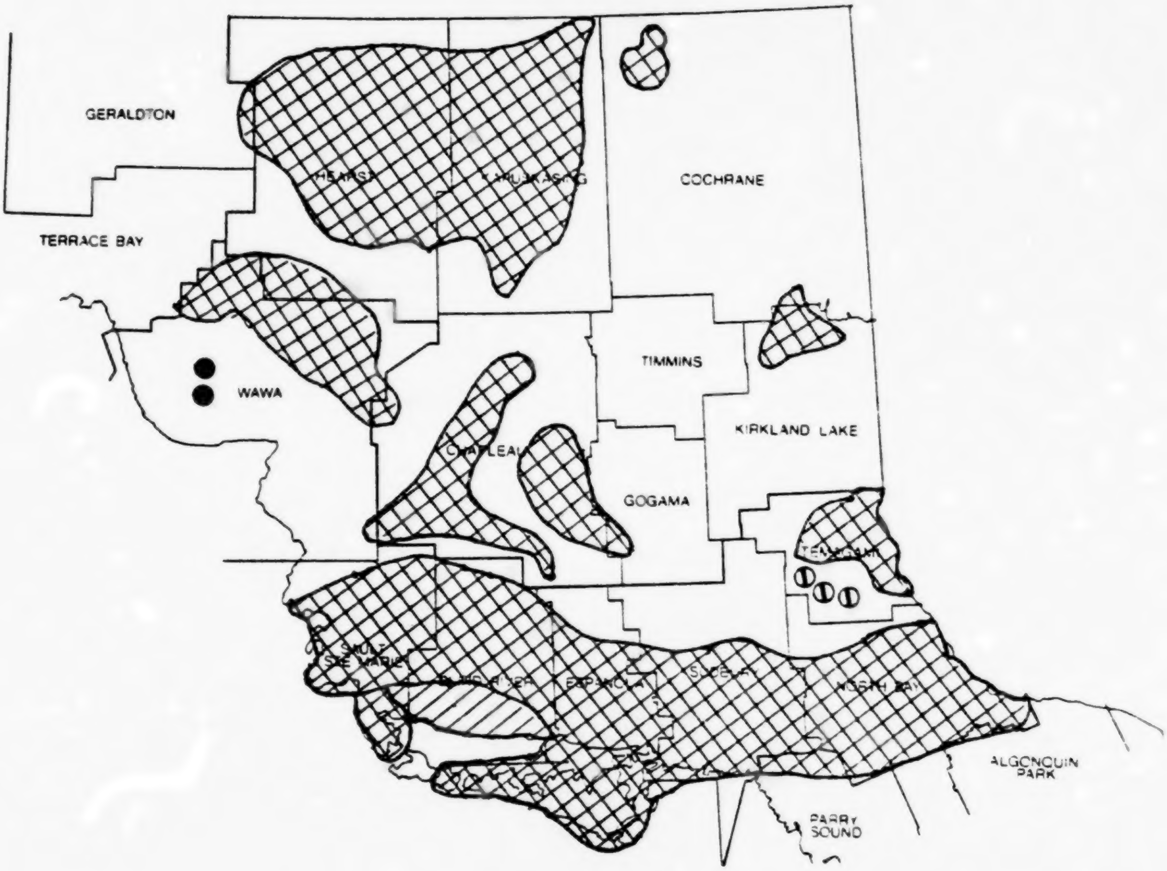
Areas within which defoliation occurred in 1951

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1952

0 Miles 60

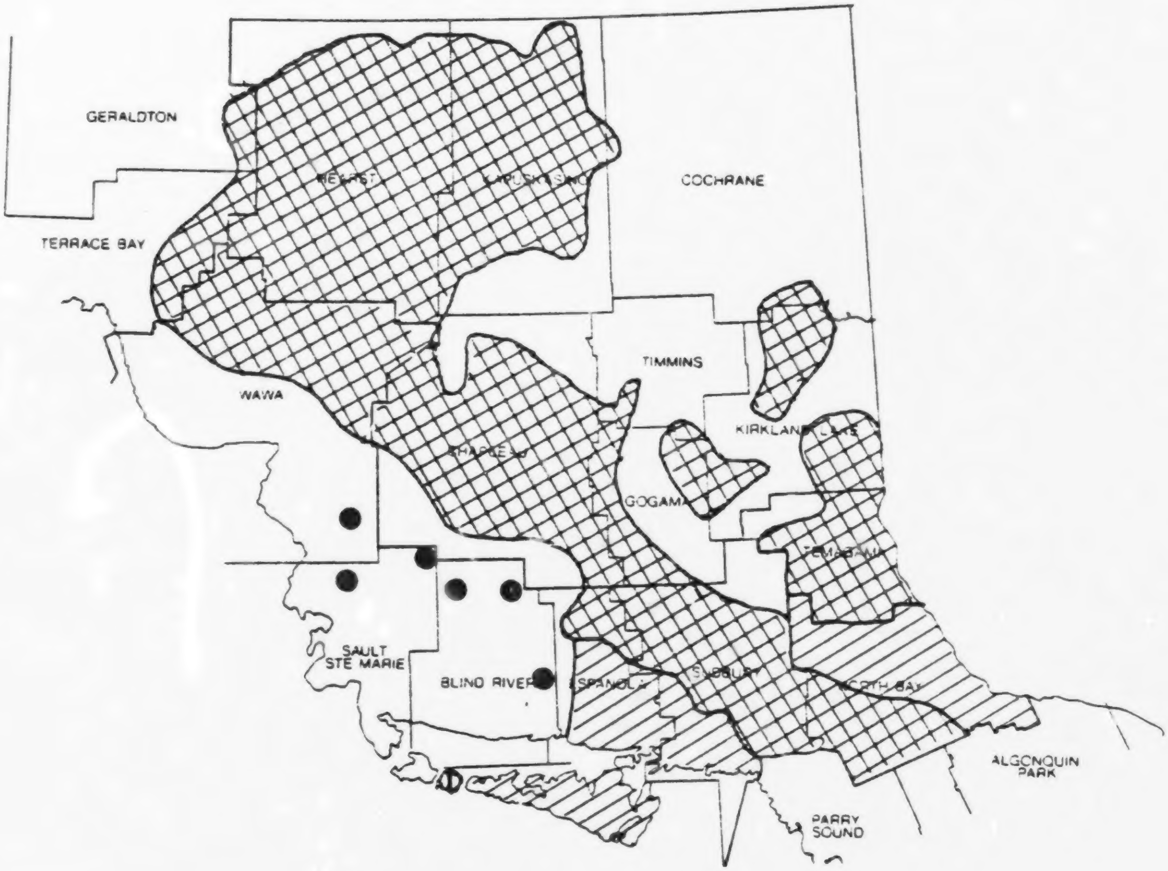
0 Kilometres 96

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1953

0 Miles 60

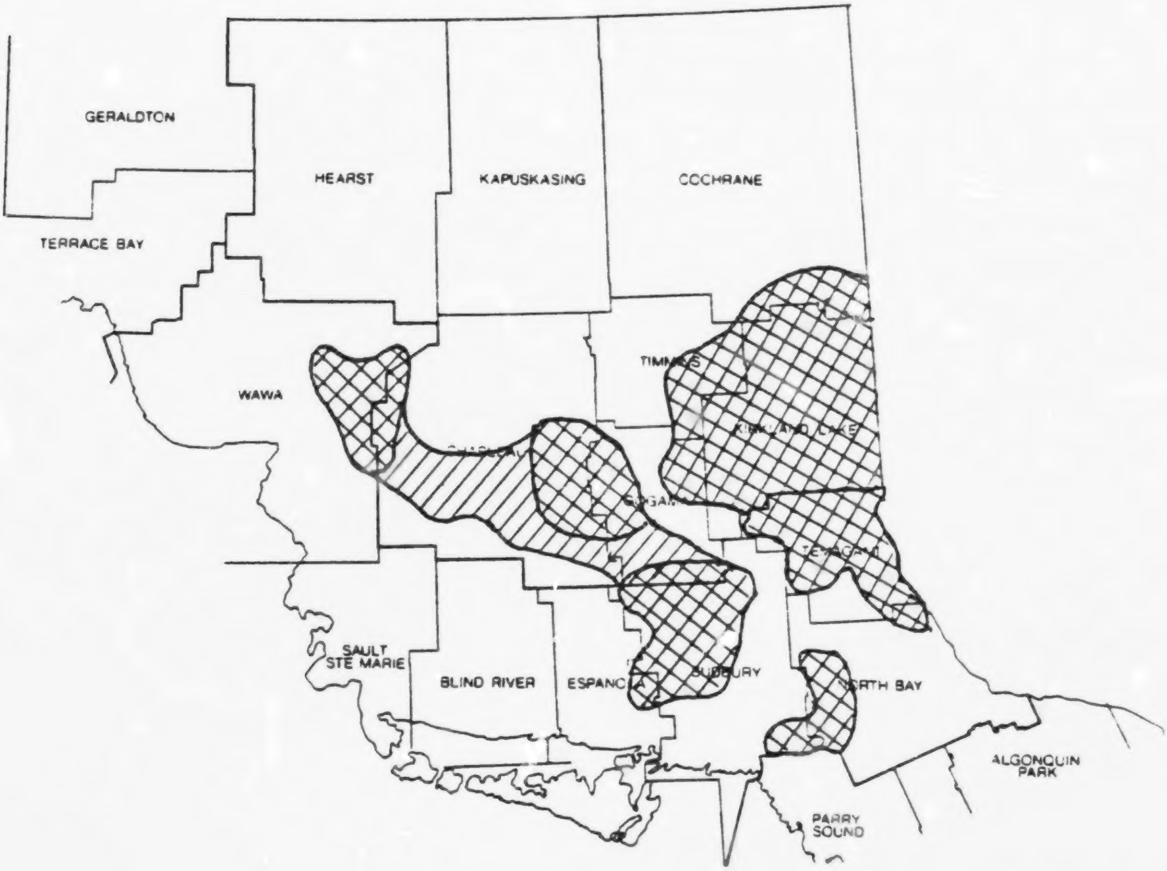
0 Kilometres 96

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ● or ▦

NORTHEASTERN ONTARIO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ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1954

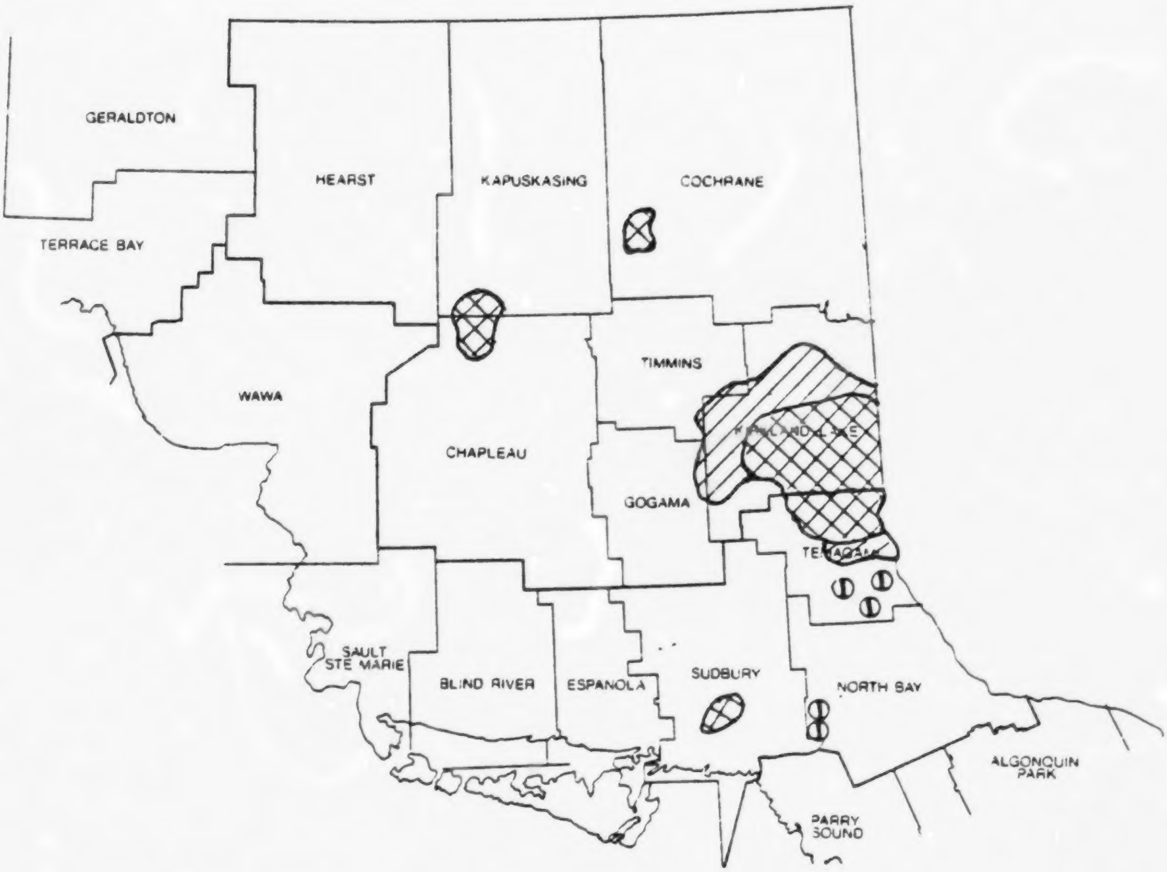
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1955

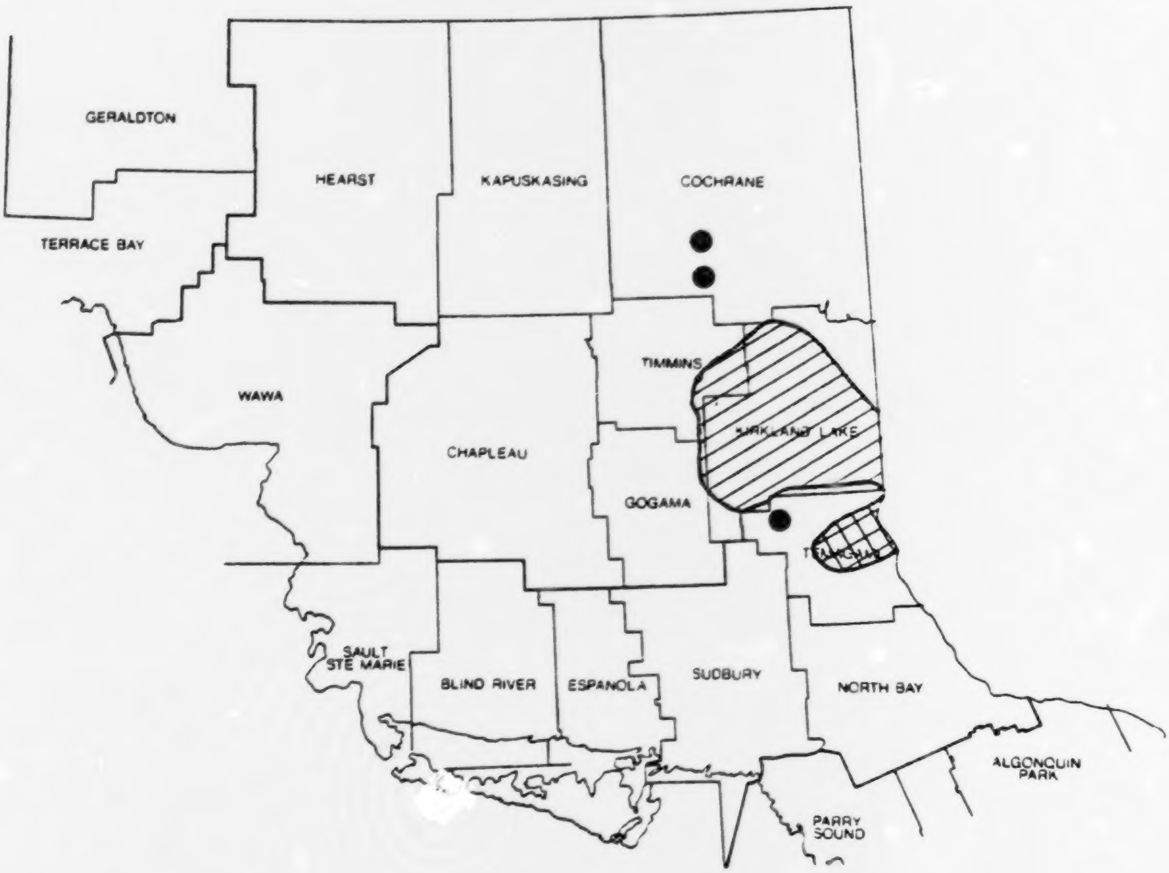
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ⦶ or ▨

Moderate-to-severe defoliation ▦

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

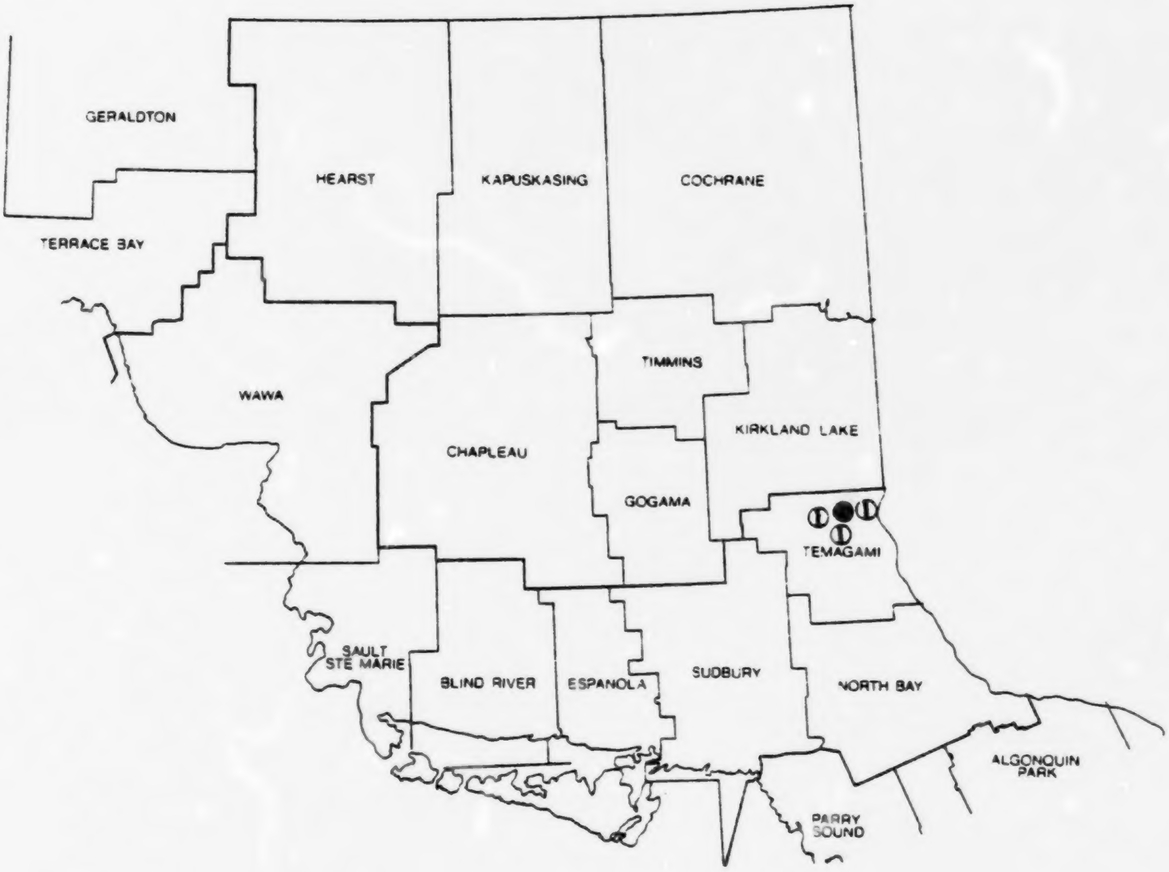
Areas within which defoliation occurred in 1956

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

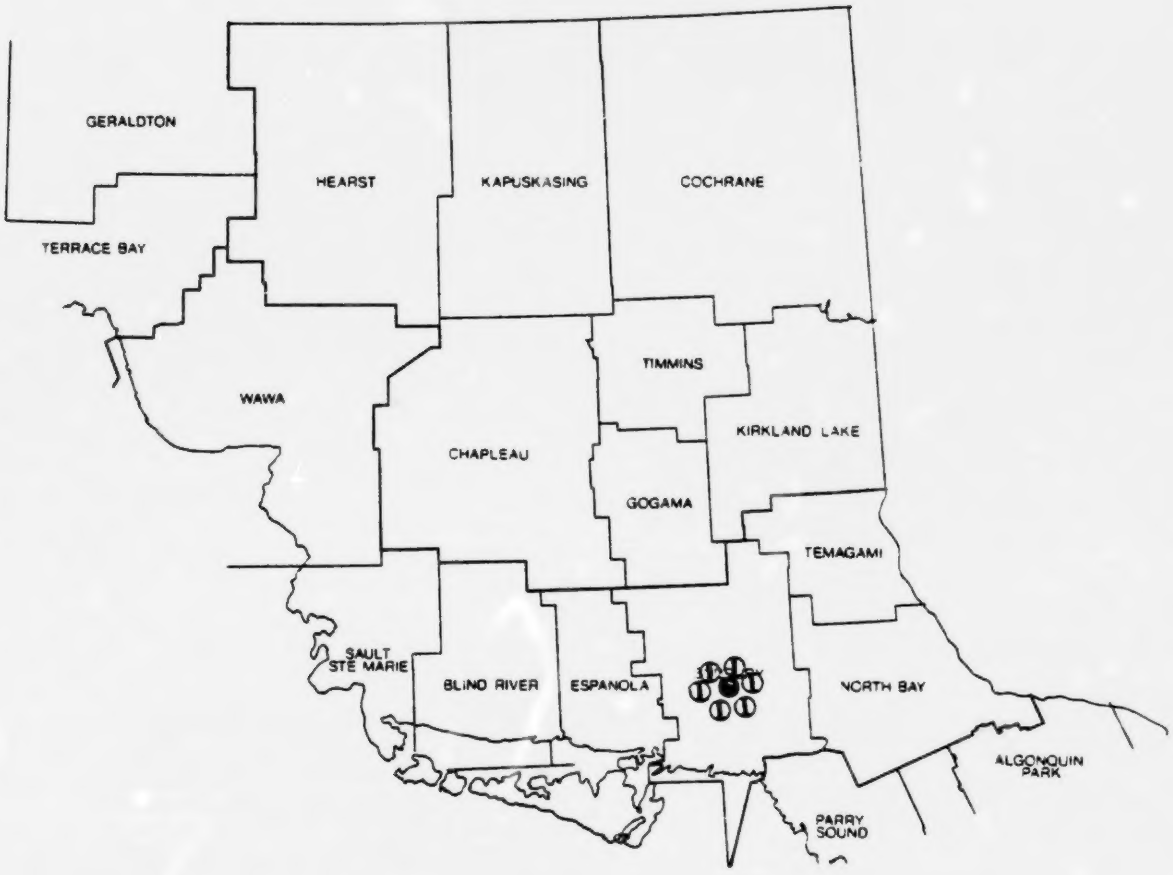
Areas within which defoliation occurred in 1957

LEGEND

Light defoliation ◑

Moderate-to-severe defoliation ●

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

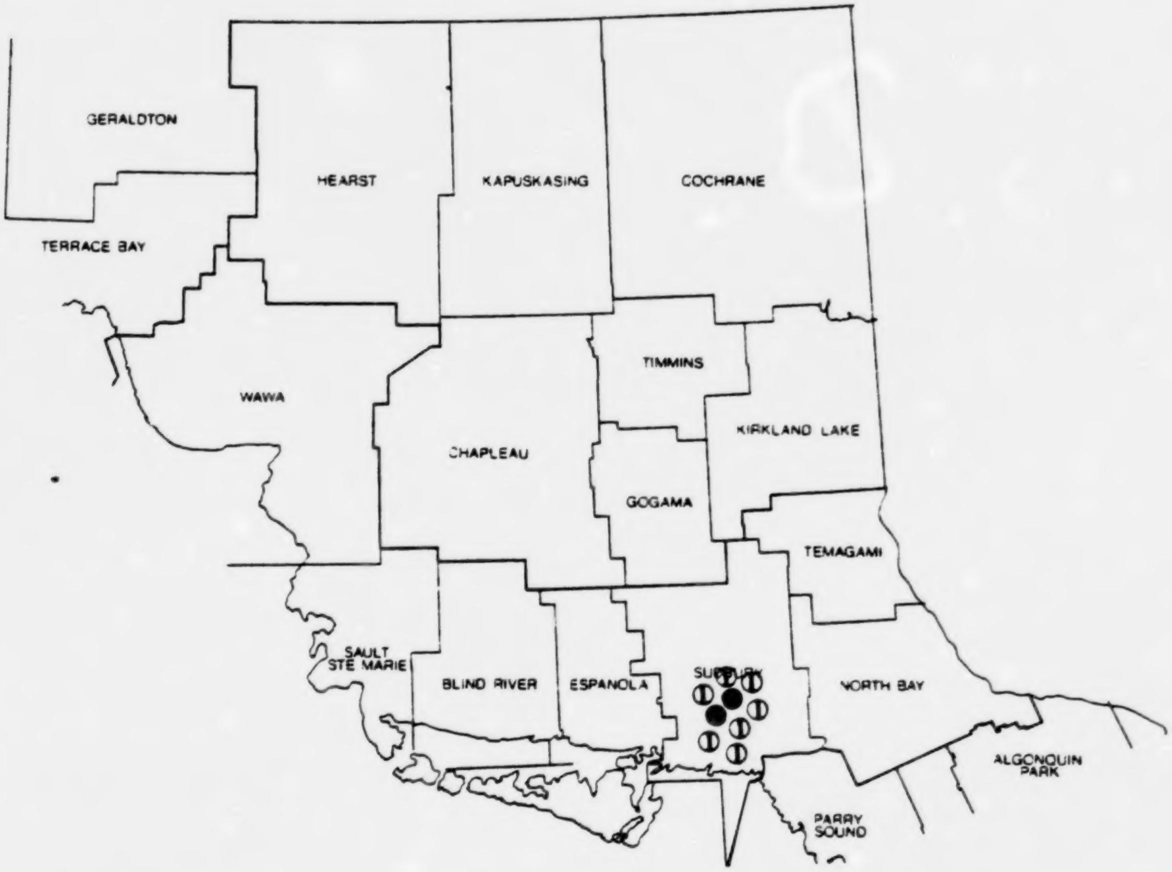
Areas within which defoliation occurred in 1960

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ●

NORTHEASTERN ONTARIO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TIMMINS
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CHAPLEAU
GOGAMA
TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

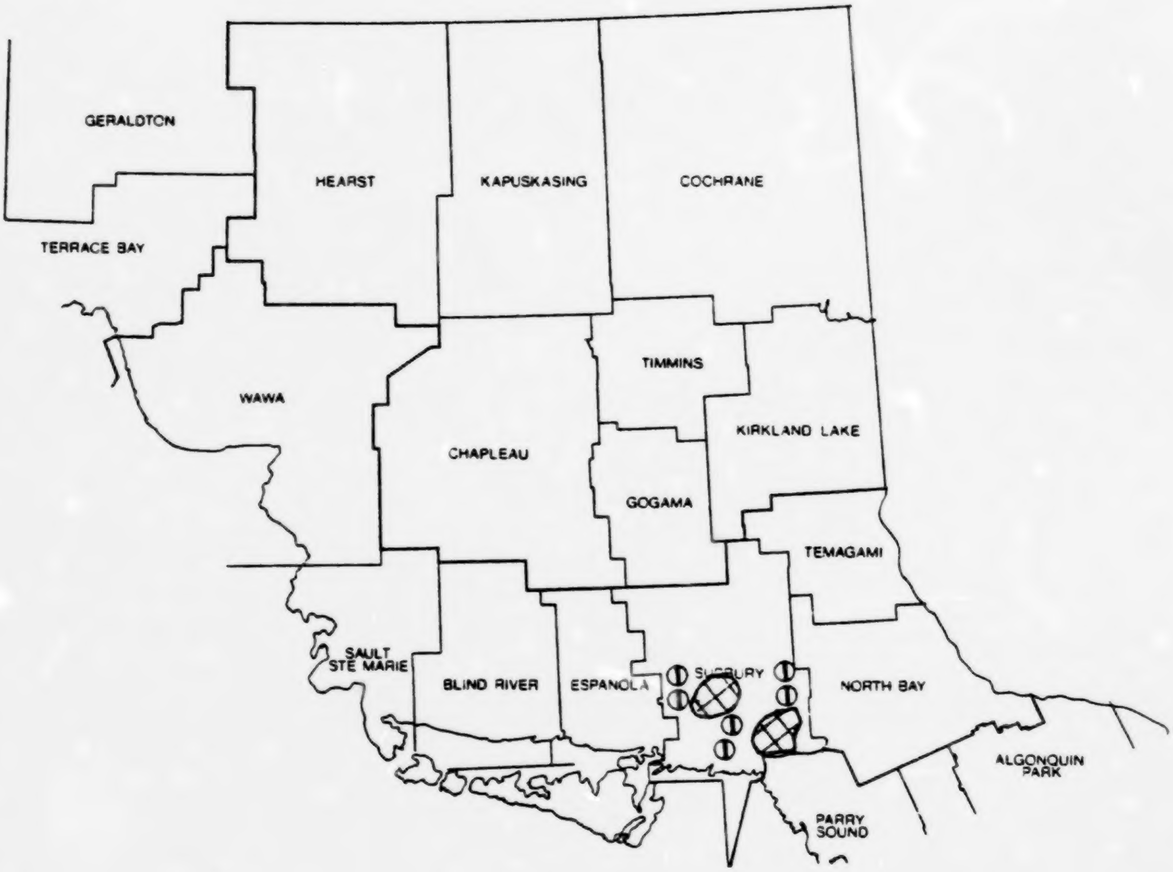
Areas within which defoliation
occurred in 1961

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ●

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

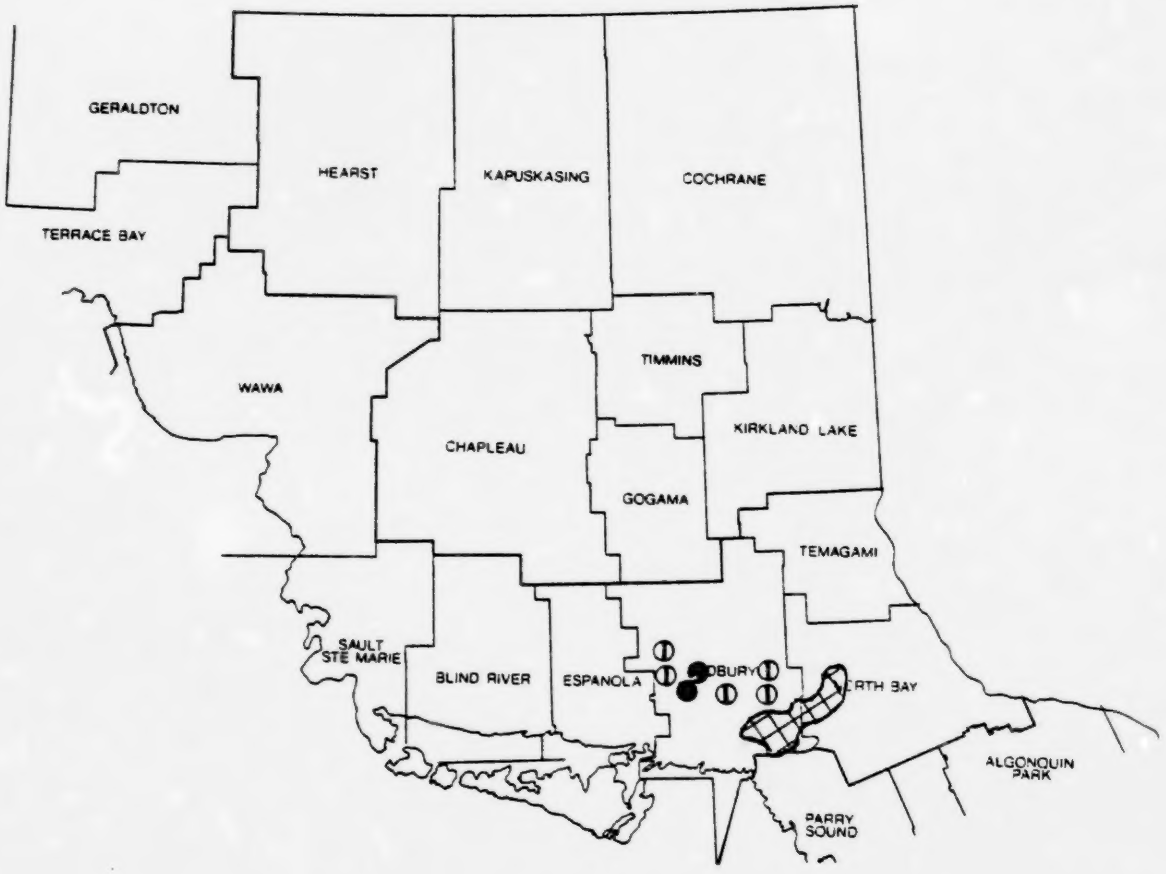
Areas within which defoliation
occurred in 1962

LEGEND

Light defoliation ◑

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
DBURY
RTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

0 Miles 60
0 Kilometres 96

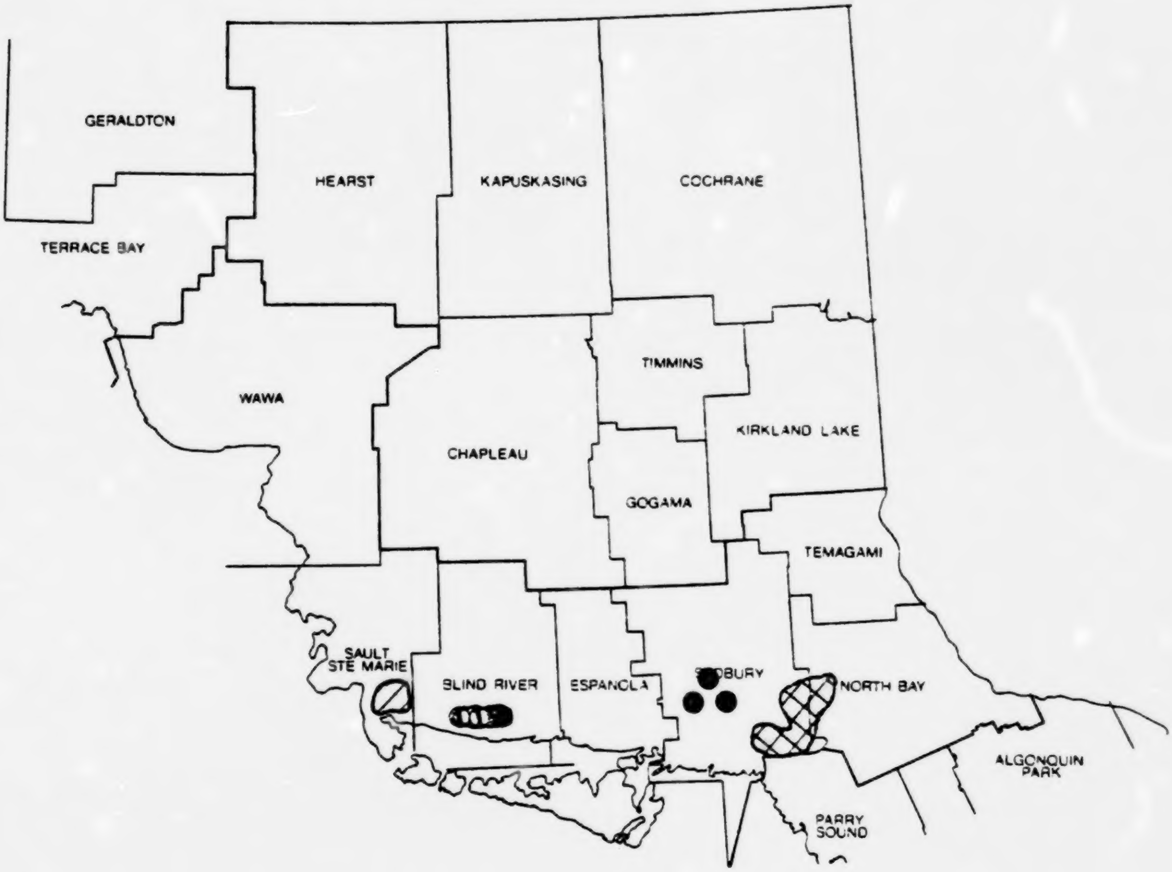
Areas within which defoliation occurred in 1963

LEGEND

Light defoliation ⦶

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1964

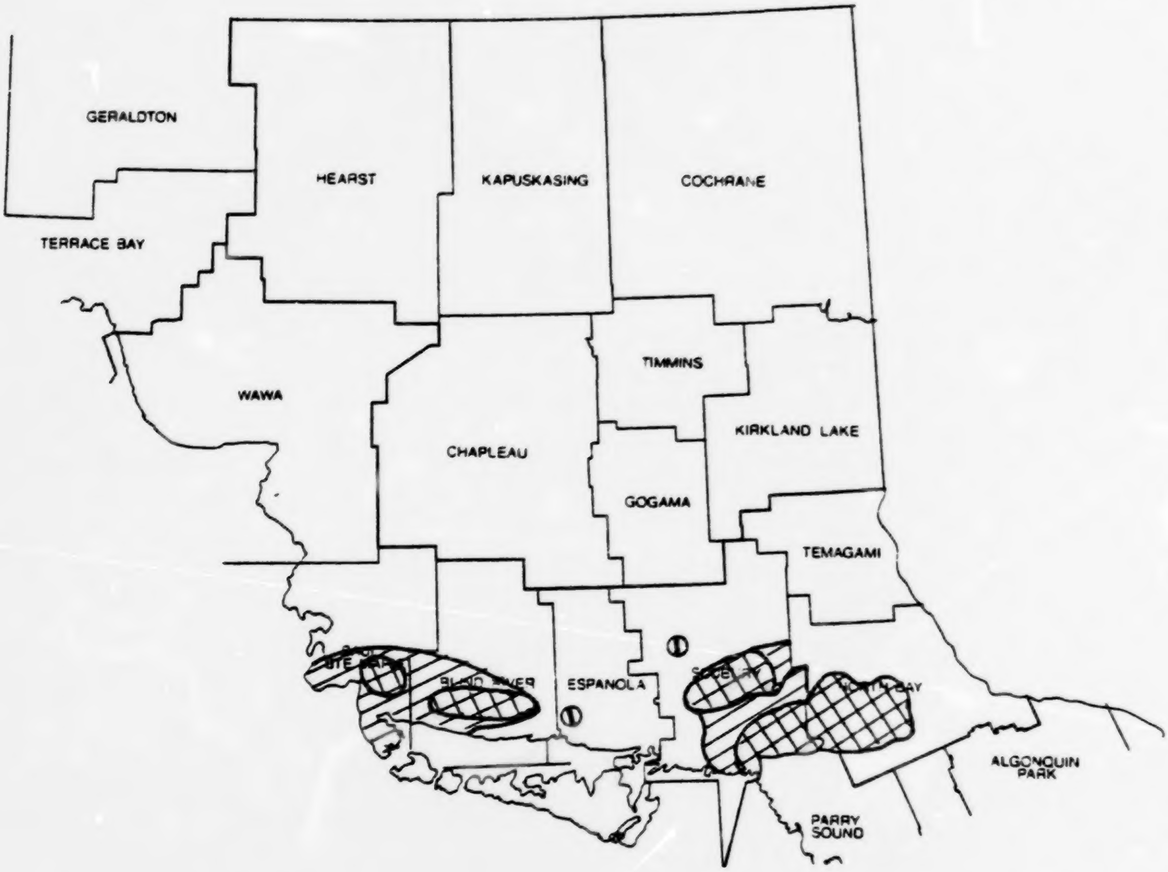
0 Miles 60
0 Kilometres 96

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ● or ▦

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

Forest Tent Caterpillar

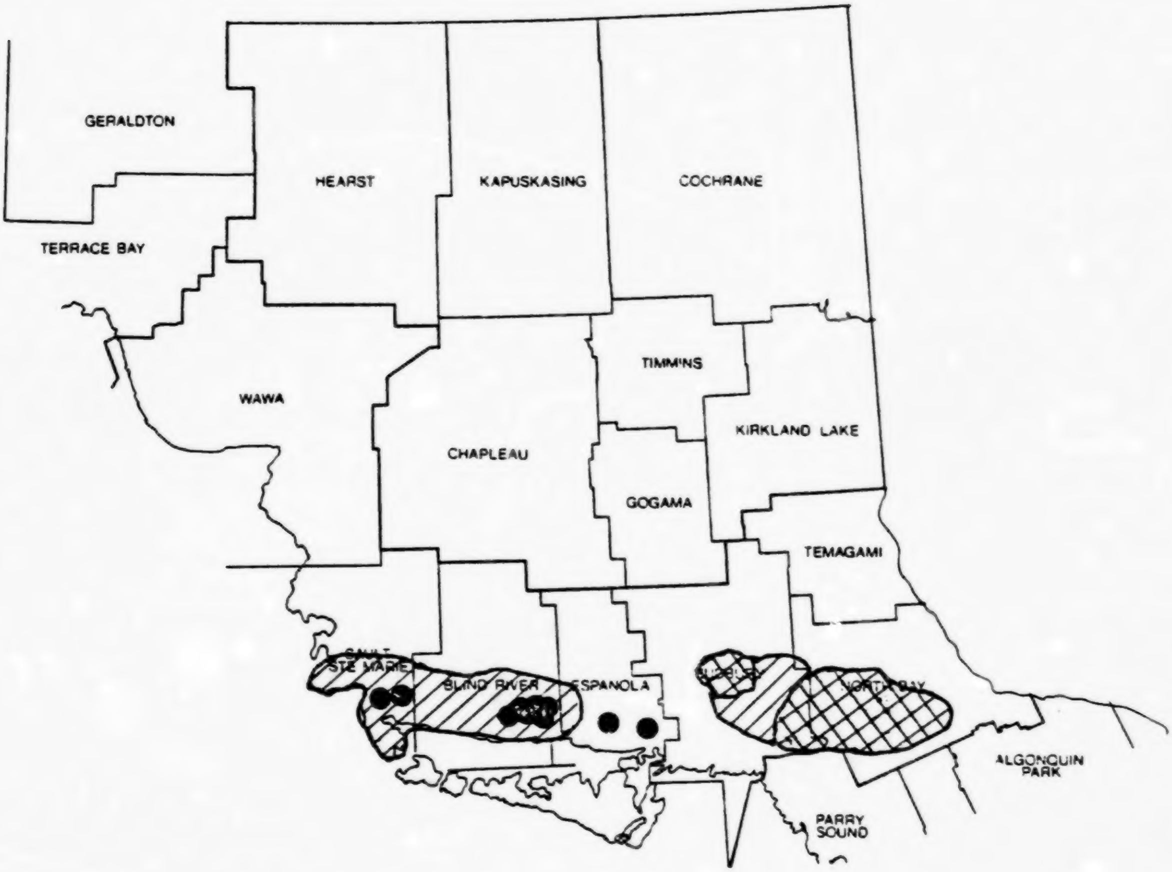
Areas within which defoliation
occurred in 1965

LEGEND

Light defoliation ◐ or ▨

Moderate-to-severe defoliation ▦

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

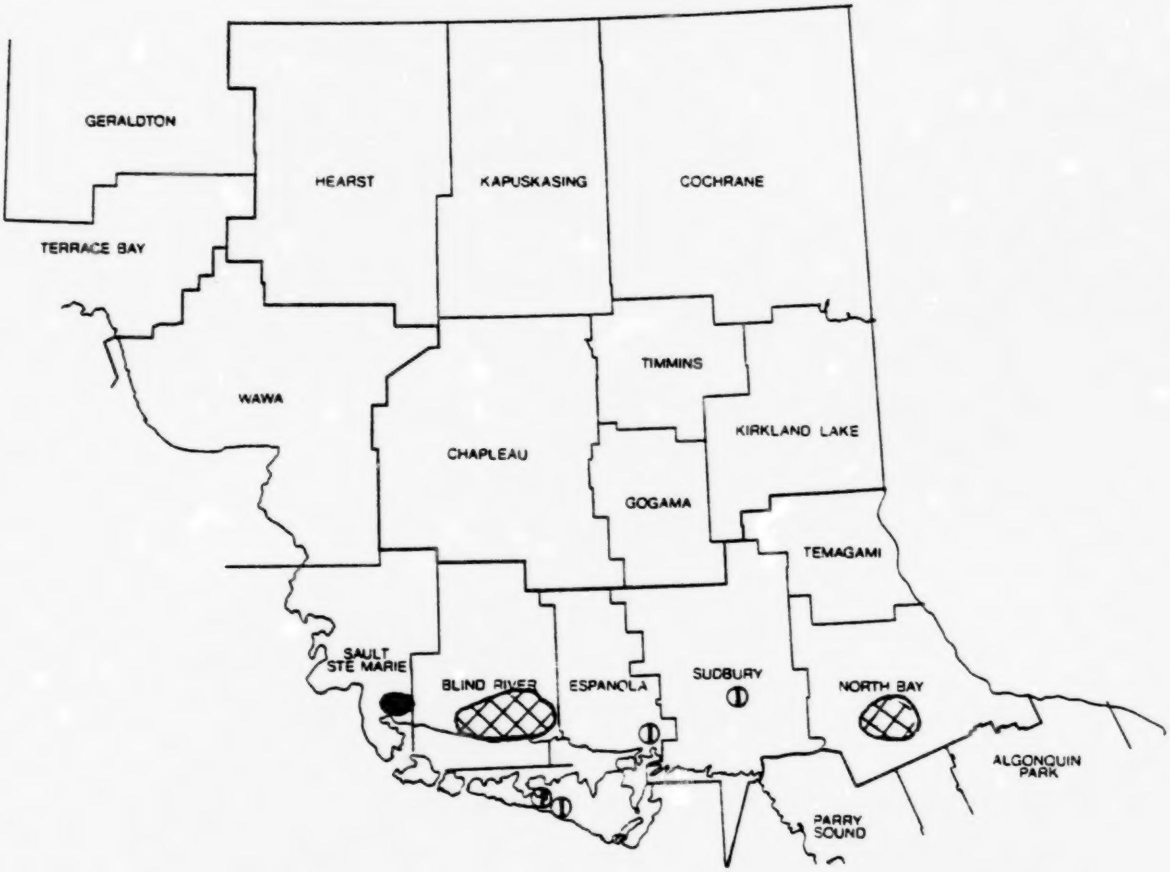
Areas within which defoliation occurred in 1966

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

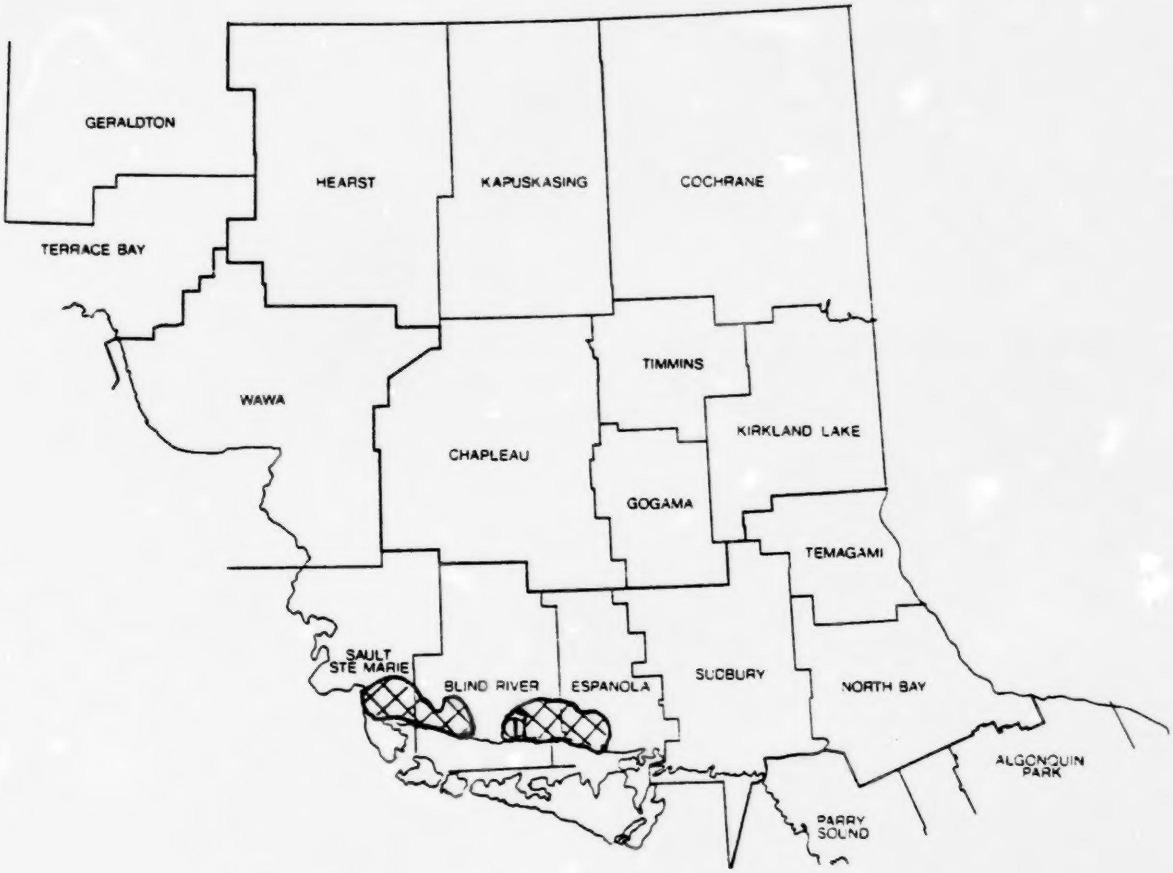
Areas within which defoliaiton
occurred in 1967

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60
0 Kilometres 96

Forest Tent Caterpillar

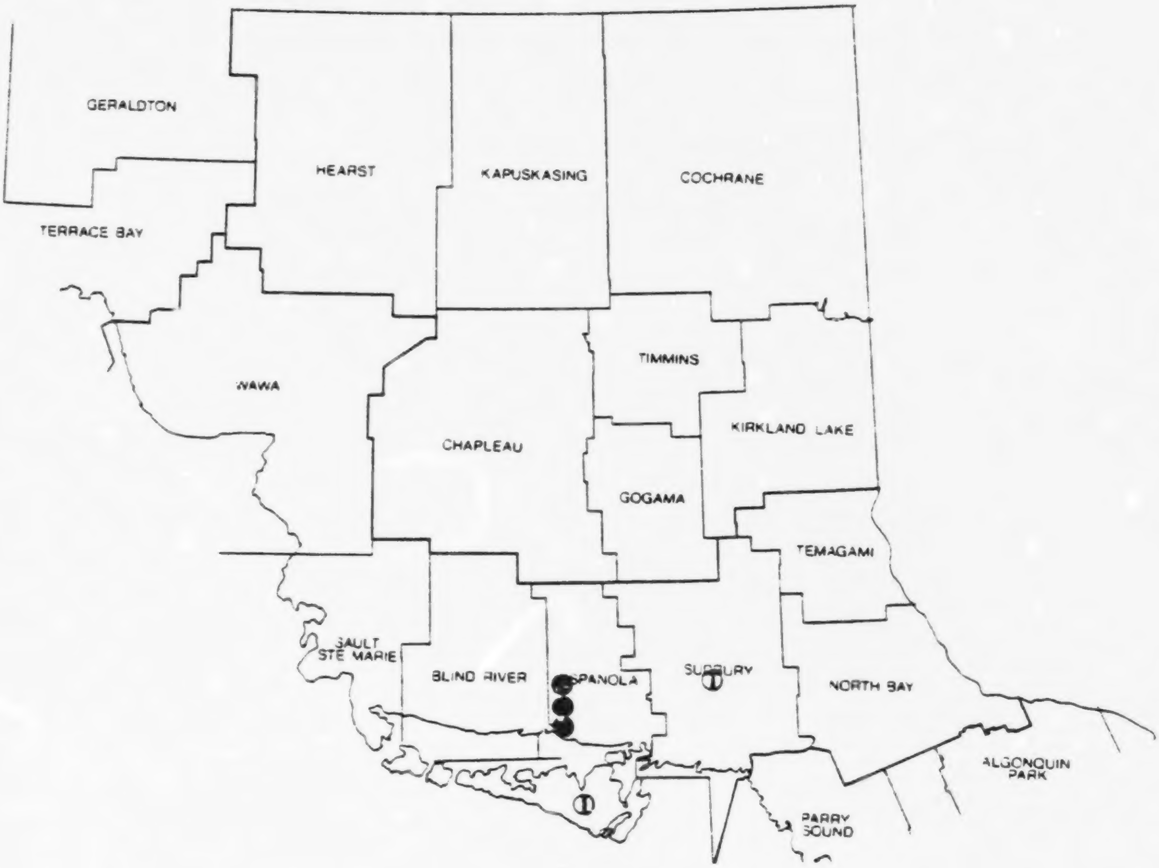
Areas within which defoliation occurred in 1968

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

0 Miles 60
0 Kilometres 96

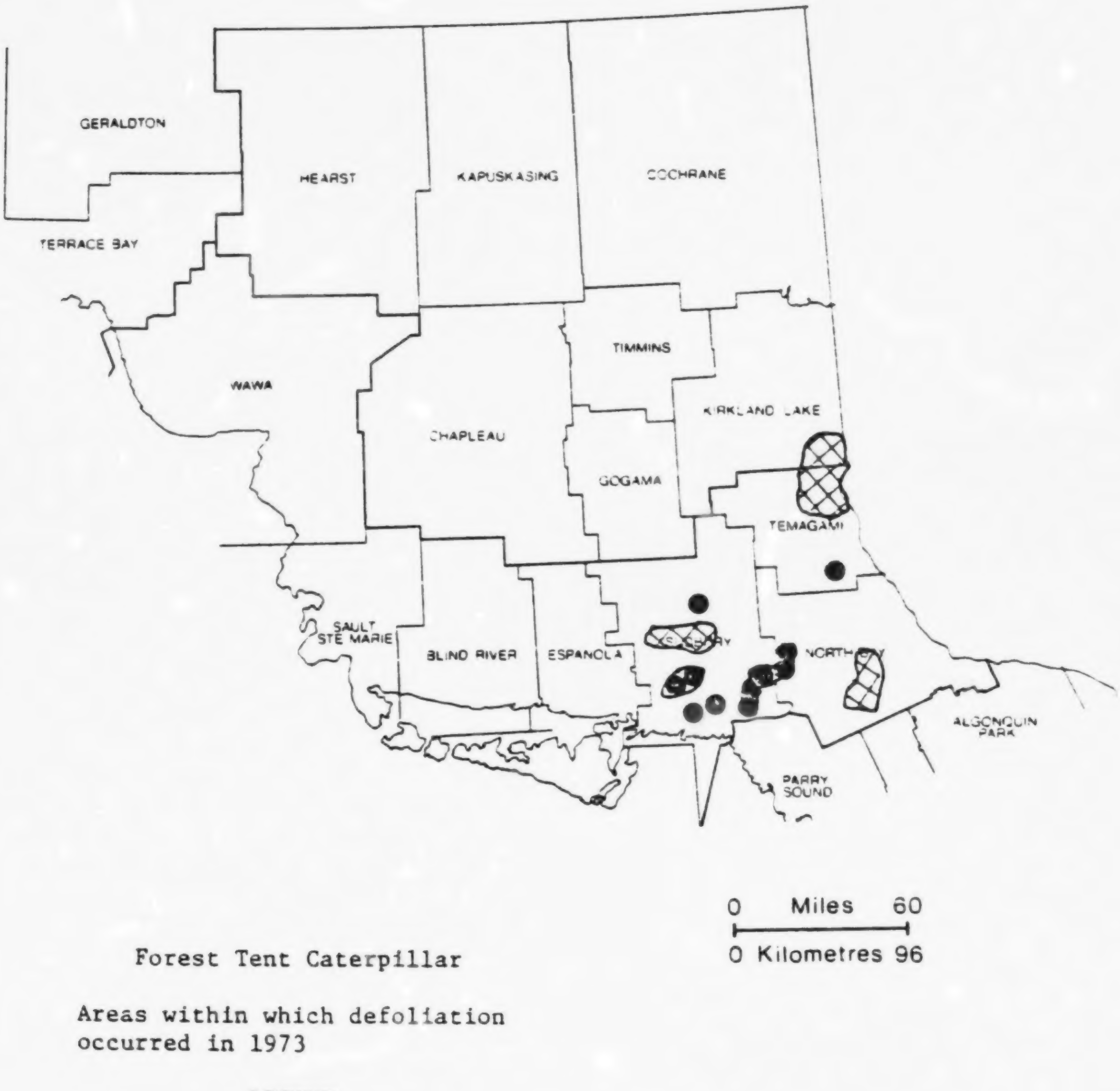
Areas within which defoliation occurred in 1969

LEGEND

Light defoliation ◐

Moderate-to-severe defoliation ●

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

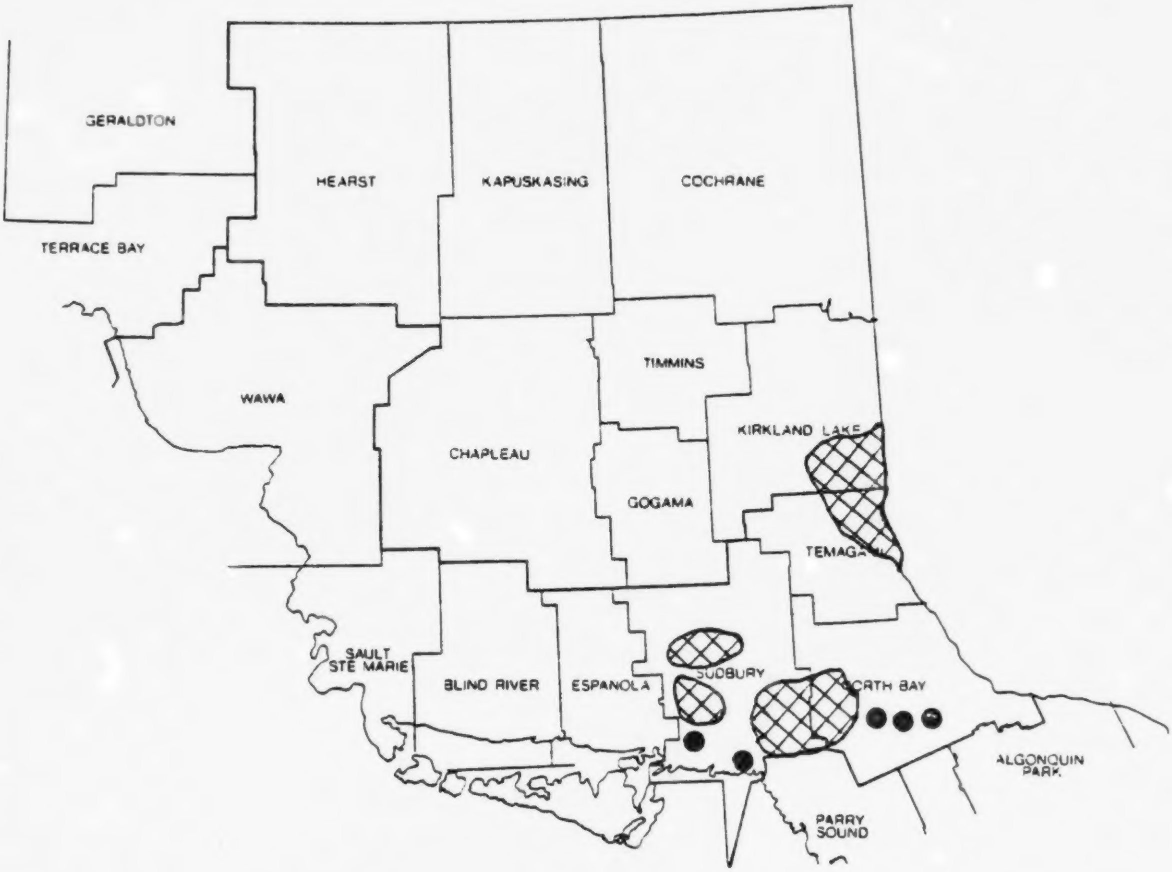
Forest Tent Caterpillar

Areas within which defoliation occurred in 1973

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

0 Miles 60

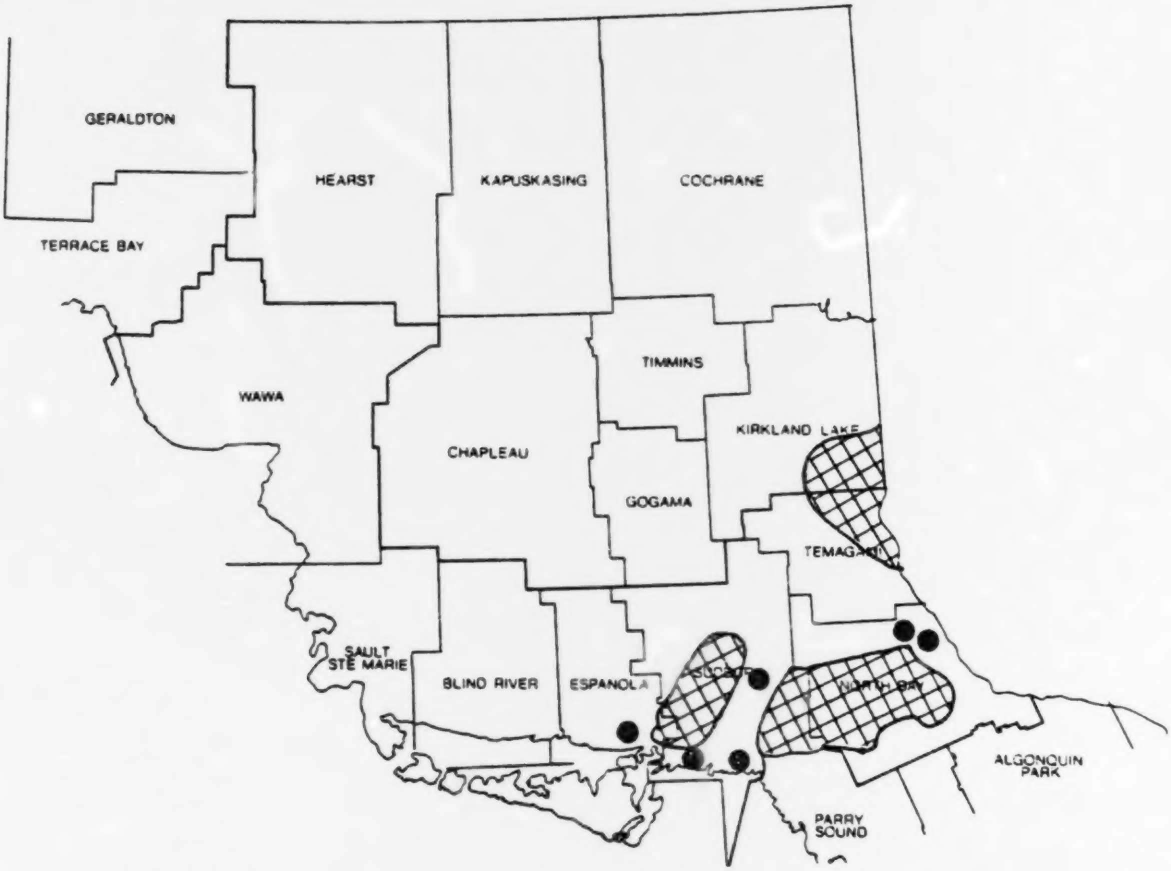
0 Kilometres 96

Areas within which defoliation occurred in 1974

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

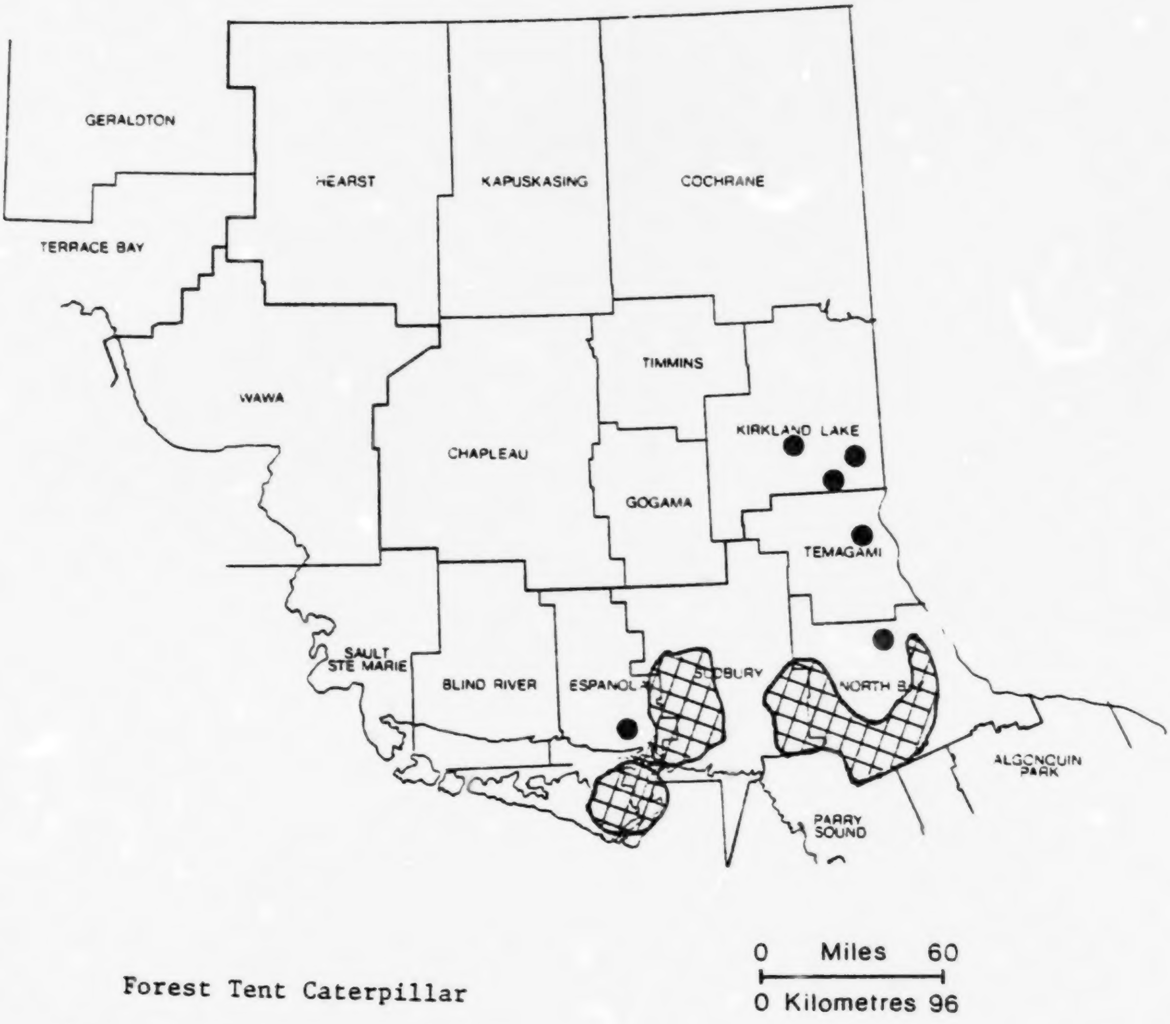
Forest Tent Caterpillar

Areas within which defoliation occurred in 1975

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

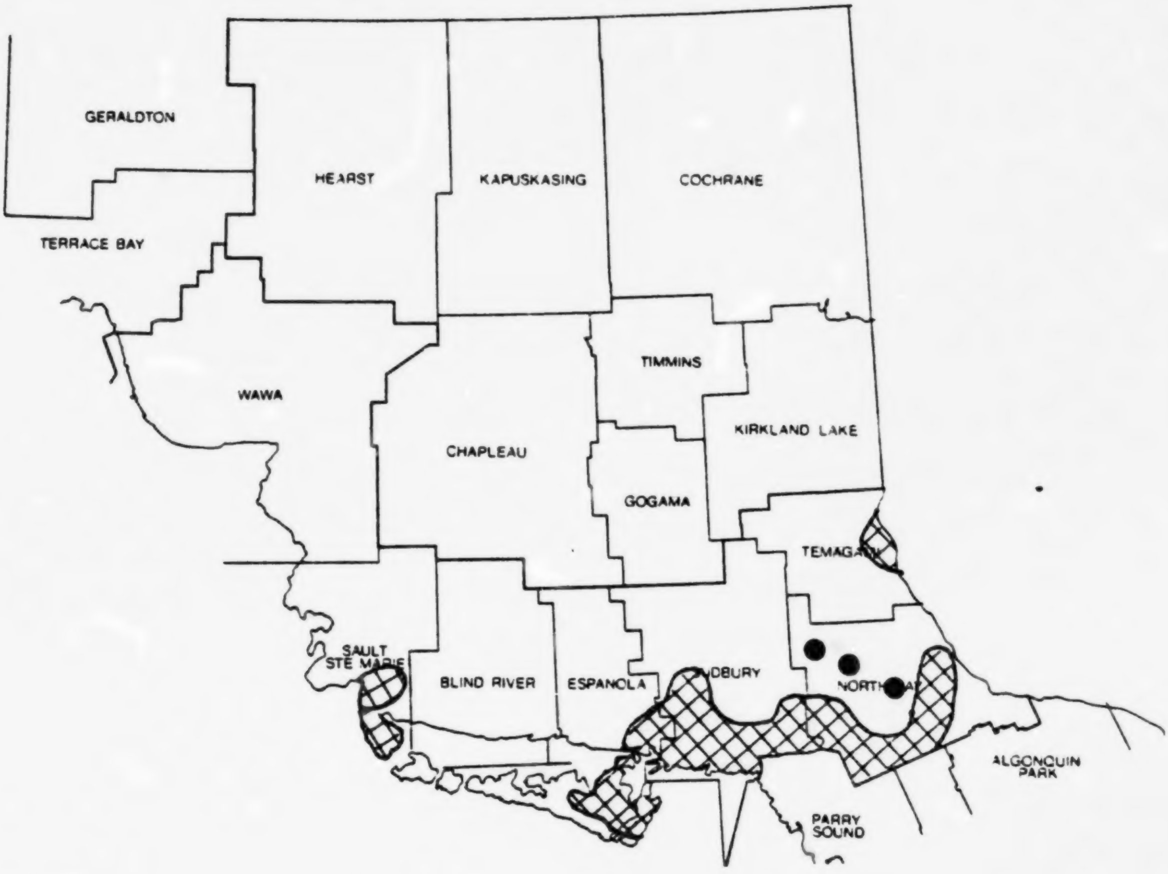
Forest Tent Caterpillar

Areas within which defoliation occurred in 1976

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

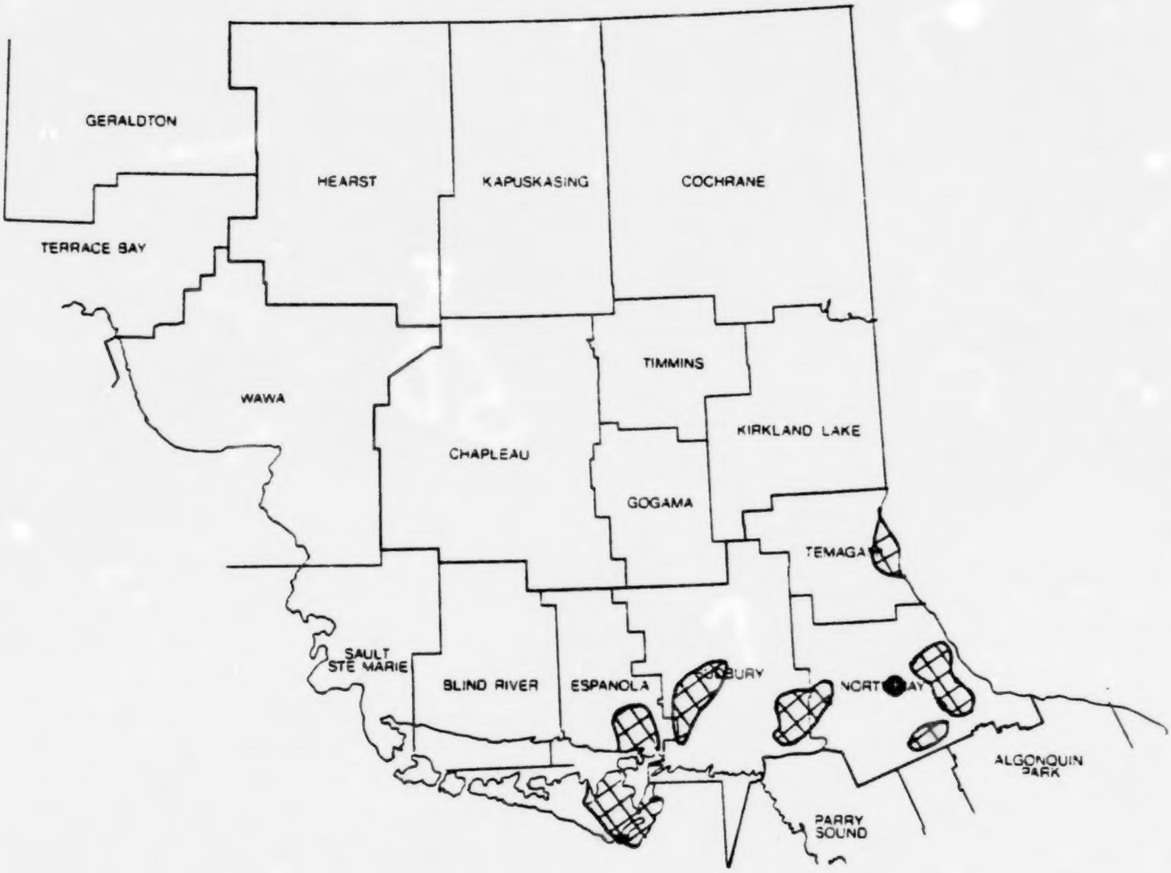
Forest Tent Caterpillar

Areas within which defoliation occurred in 1977

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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TEMAGA
SAULT STE MARIE
BLIND RIVER
ESPANOLA
BURY
NORT AY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

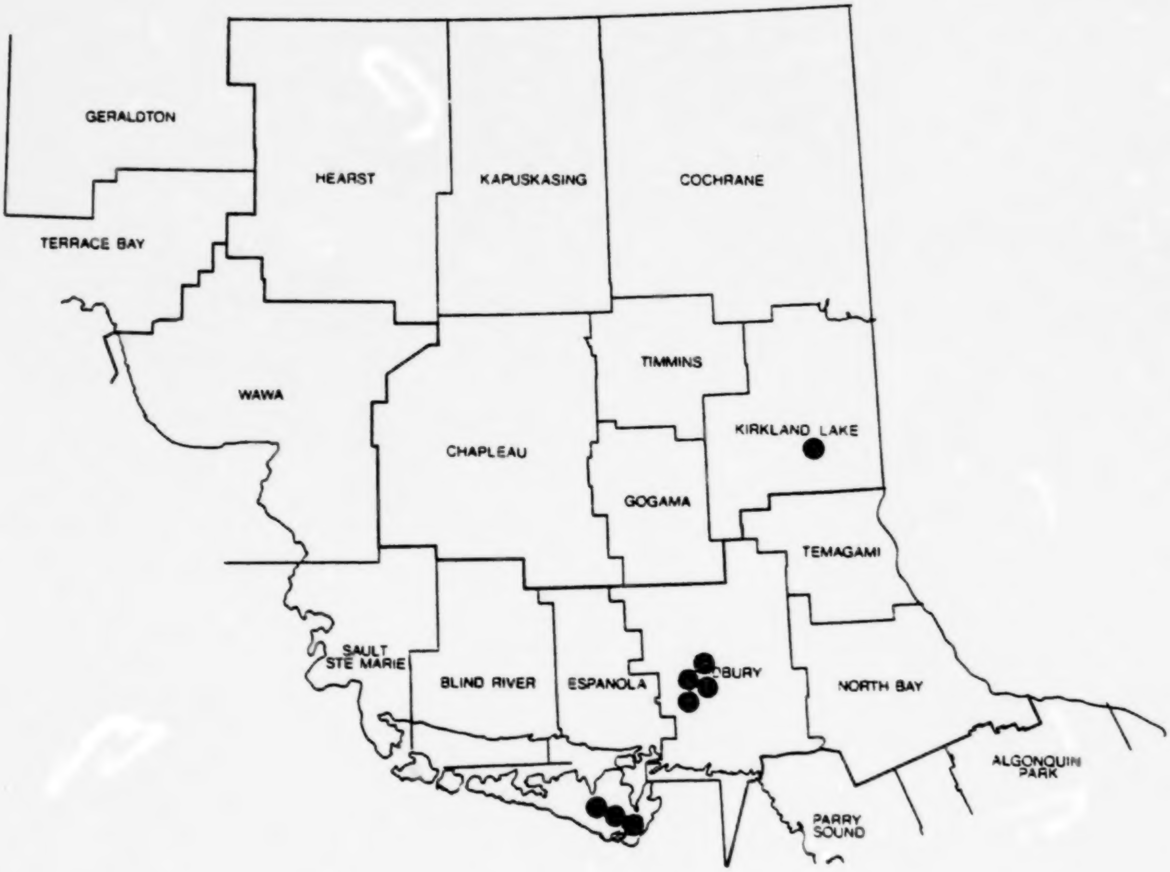
Forest Tent Caterpillar

Areas within which defoliation occurred in 1978

LEGEND

Moderate-to-severe defoliation ● or ▩

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

Forest Tent Caterpillar

Areas within which defoliation occurred in 1979

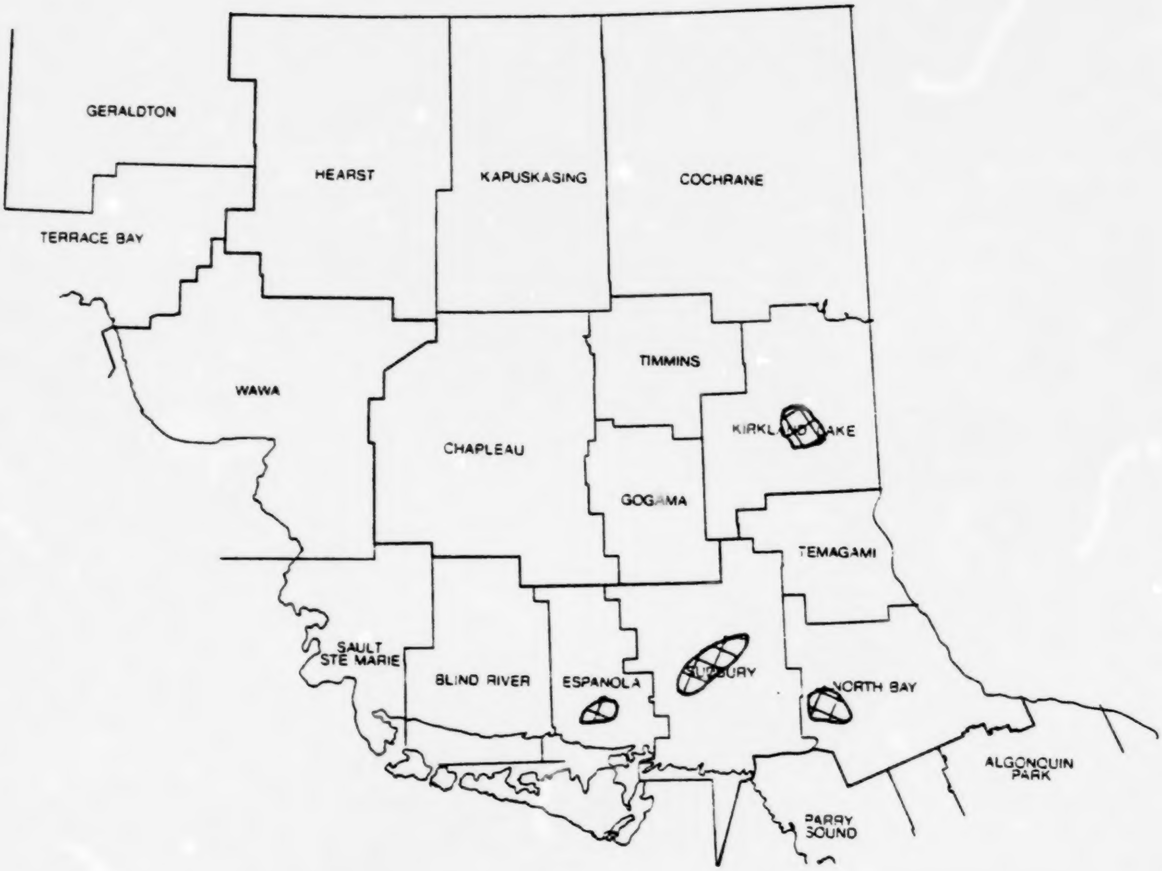
LEGEND

Moderate-to-severe defoliation ●

0 Miles 60

0 Kilometres 96

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND

0 Miles 60

0 Kilometres 96

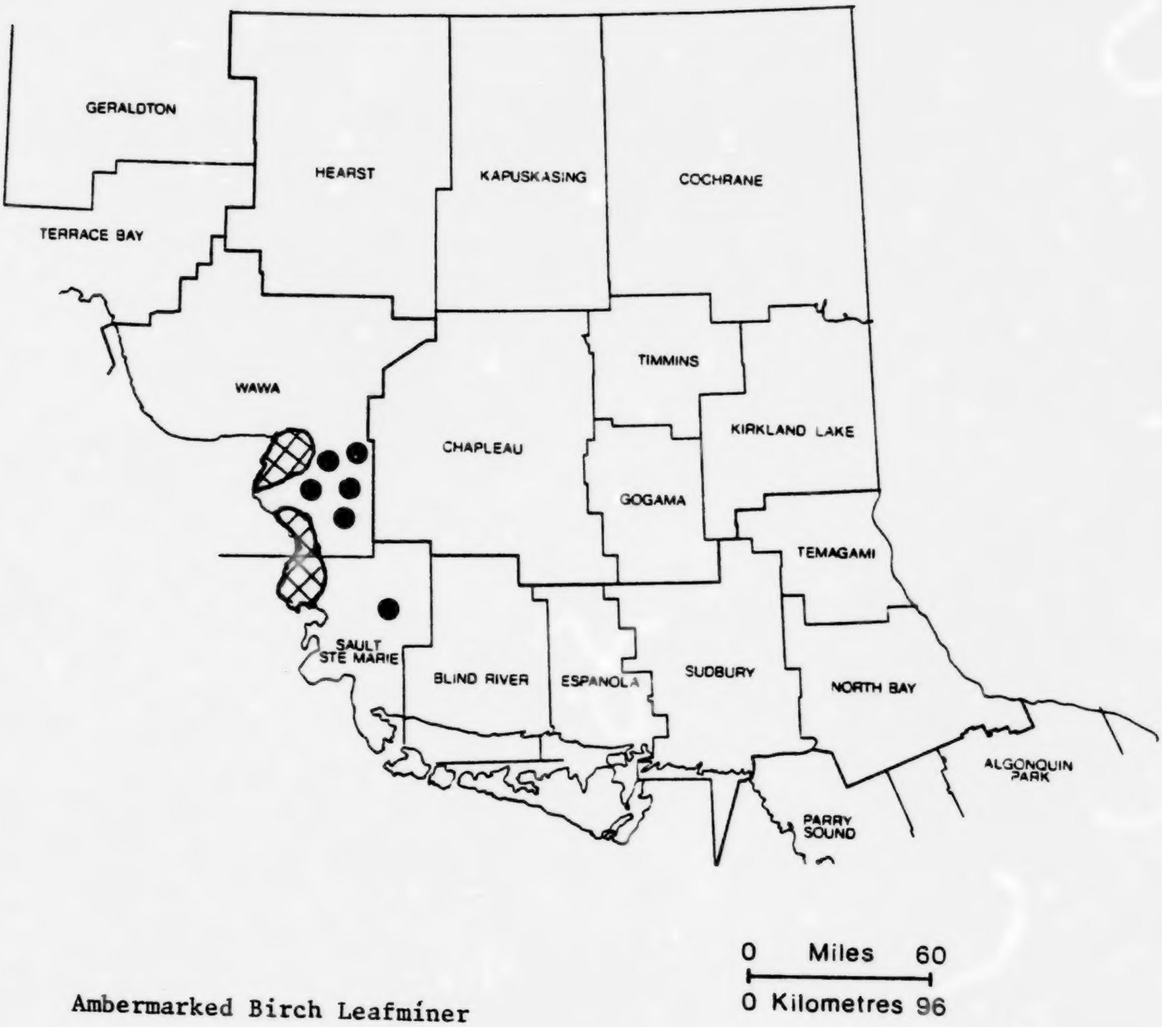
Forest Tent Caterpillar

Areas within which defoliation
occurred in 1980

LEGEND

Moderate-to-severe defoliation ▨

NORTHEASTERN ONTARIO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TEMAGAMI
SAULT STE MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

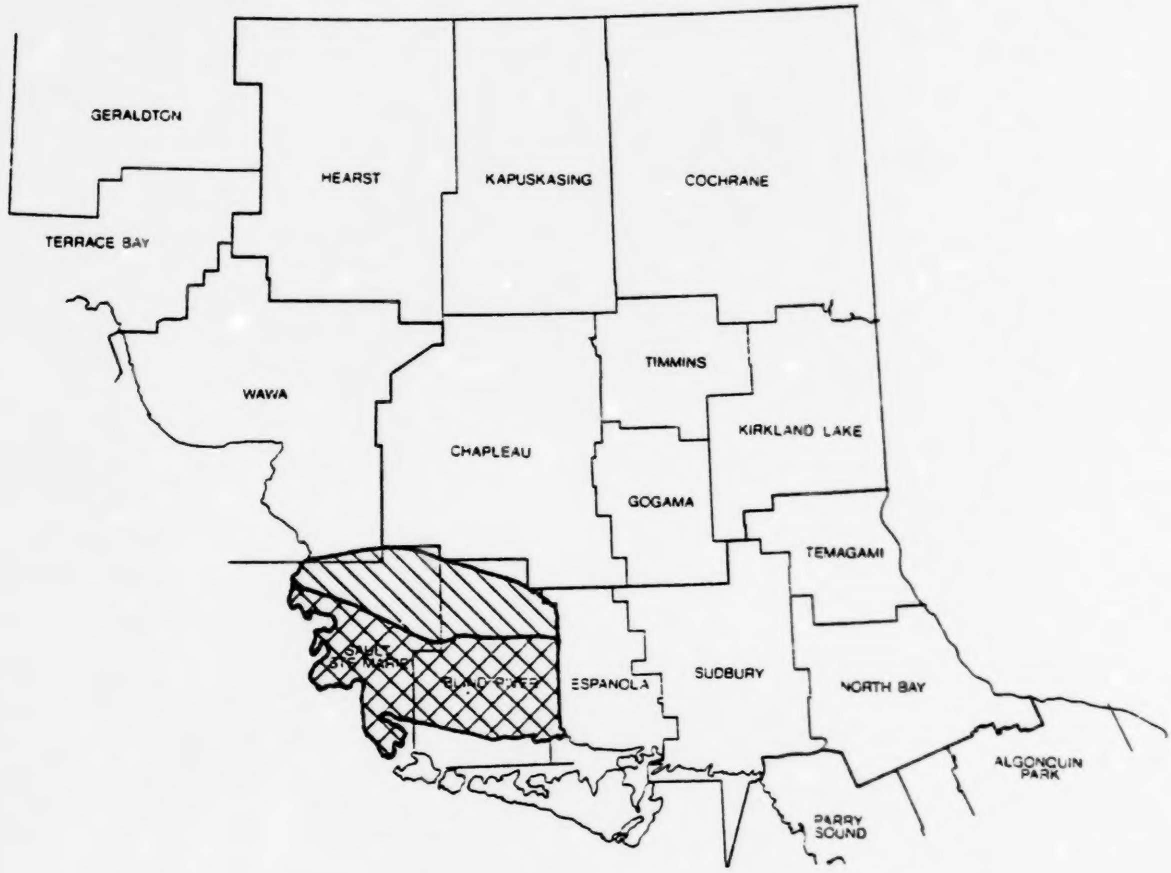
Ambermarked Birch Leafminer

Areas with which defoliation occurred in 1958

LEGEND

Moderate-to-severe defoliation ● or ▨

NORTHEASTERN ONTARIO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SAULT STE. MARIE
BLIND RIVER
ESPANOLA
SUDBURY
NORTH BAY
ALGONQUIN PARK
PARRY SOUND
0 Miles 60
0 Kilometres 96

Ambermarked Birch Leafminer

Areas within which defoliation occurred in 1960

LEGEND

Light defoliation ▨

Moderate-to-severe defoliation ▩